

# REPORT

ON THE

# HEALTH OF THE CITY

OF

## BIRMINGHAM,

FOR THE YEAR 1895;

ALSO,

ON THE PROCEEDINGS TAKEN UNDER THE ACTS FOR THE

## PREVENTION OF ADULTERATION

OF ARTICLES OF FOOD AND DRINK,

BY

ALFRED HILL, M.D., F.R.S.E., F.I.C.,

*Past-President of the Society of Medical Officers of Health;  
Past-President of the Society of Public Analysts; Late Examiner in Public  
Health to the University of Aberdeen; Fellow of the Sanitary  
Institute; Fellow of the College of State Medicine; Fellow  
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MEDICAL OFFICER OF HEALTH AND ANALYST TO THE CITY.

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BIRMINGHAM:

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PRINTED BY ORDER OF THE HEALTH COMMITTEE

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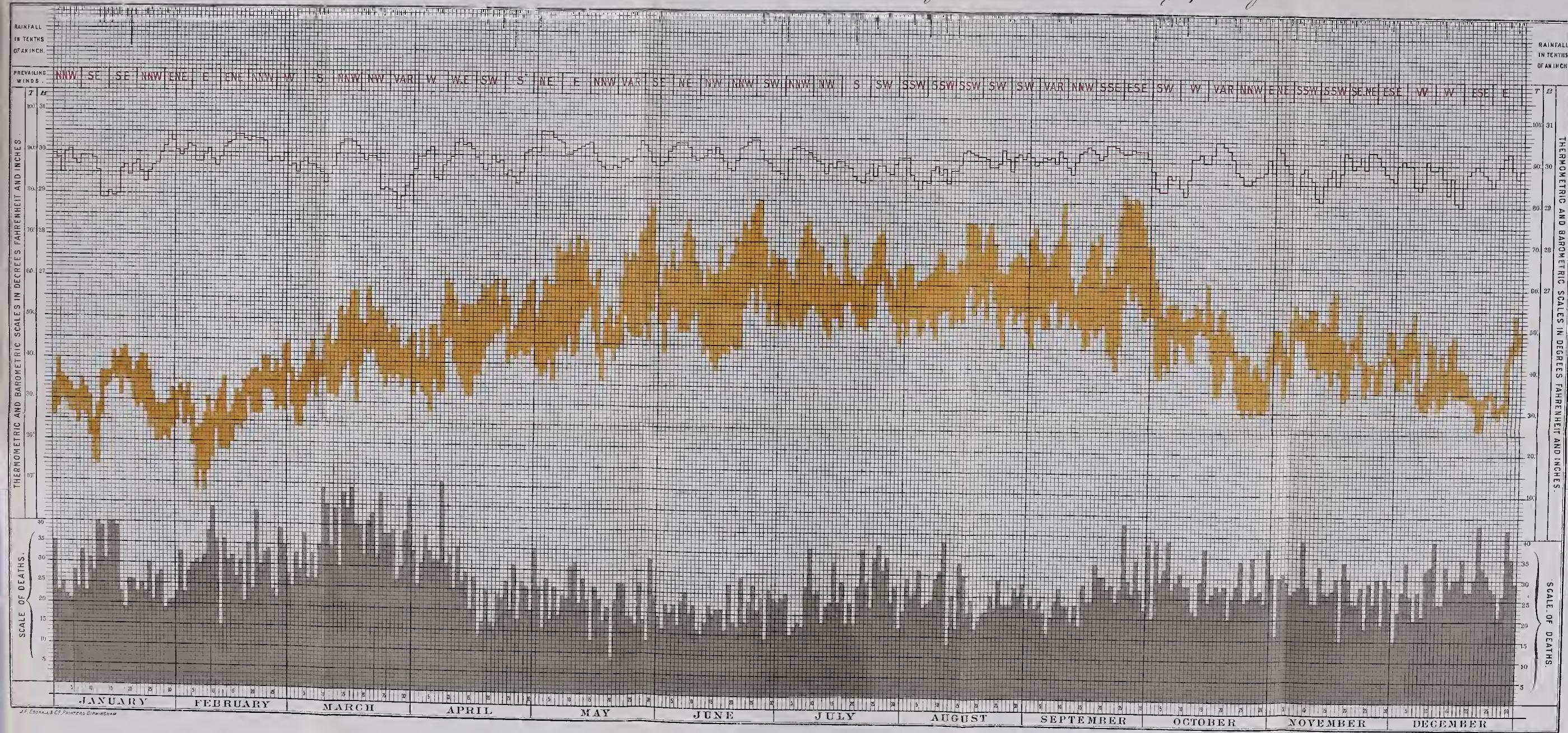


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# City of Birmingham.

Chart illustrating the relations of the number of deaths, to the principal meteorological conditions on each day of the year 1895.



MORTALITY: — Deaths

METEOROLOGY: — Temperature (maximum and minimum)

BAROMETRIC PRESSURE —

RAINFALL.

(corrected and reduced to  
32° Fahrenheit and sea level)



*With the*  
*Medical Officer of Health's Compliments.*



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HEALTH DEPARTMENT,  
THE COUNCIL HOUSE,  
BIRMINGHAM,  
*March 20th, 1896.*

TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I beg to present to you my twenty-third Annual Report as Introductory Remarks. Medical Officer of Health for the City, the report being for the year which ended on December 28th, 1895.

I cannot say that the past year has been altogether a satisfactory one. The total Death-rate was practically identical with the average for the last ten years, so that in this particular the statistics show the general health of the town to have been just maintained, but not improved.

The zymotic Death-rate also showed little variation from the average. Certain of the zymotic diseases, however, exhibited great increases both in prevalence and mortality. Chief amongst these were Diphtheria and Scarlet Fever, with which I have dealt at some length in the body of my report. I am pleased to say that the recent epidemic of Smallpox came to an end in the early part of the year, not a single case of the disease having occurred in the last six months.

As it is now five years since the taking of the last census, I think it may not be inappropriate if I give a few figures relating to the last two quinquennial periods. I find that the average Birth-rate was almost the same in these two quinquennia, being 32·9 in the five years 1886–1890, and 32·7 in the five years 1891–95. There was but little difference also in the Death-rates for the two periods, that for the first quinquennium being 19·8, and that for the second 20·1. Unfortunately what difference there is in the two rates, instead of showing an improvement as one could have wished it to do, shows a slight retrogression. The infant mortality, that is the deaths under one year to births, rose from 170 to 175 per 1,000. The general zymotic Death-rate showed a little improvement, falling from 2·8 to 2·5, and this improvement was shared in by Scarlet Fever, but Diphtheria and Typhoid Fever suffered some increase. Perhaps the figures will be more plainly seen from the statement below:—

DEATH RATE PER 1,000 FROM

	All Causes.	Zymotic Diseases.	Scarlet Fever.	Diphtheria.	Fever.	Infant Mortality.
5 years— 1886–90	19·8	2·8	·21	·14	·14	170
5 years— 1891–95	20·1	2·5	·18	·15	·17	175

I regret that the health of the City, as judged from these figures, has shown no improvement in the two last quinquennial periods, but rather the reverse. I cannot think that the present position of the town indicates the greatest degree of healthiness possible to it, and I believe that with the carrying out of certain sanitary improvements the mortality in the City may yet be considerably reduced. Amongst the improvements necessary I would place the substitution of water-closets for pan and ashpit privies, the paving of courts, the systematic cleansing of the yards and outhouses in the poorer parts of the town, and the overhauling of the sewers whenever there is reason to suspect that they may be defective. Work of this kind is already being carried out to a certain extent, and I believe that eventually it will be found to exert a very beneficial influence on the health of the City.

## I. VITAL STATISTICS.

### Elevation.

The elevation of Birmingham is considerable, its highest part, near the junction of Hagley Road and Harborne Lane, being 675 feet, and its lowest, near the River Tame at Bromford, 281 feet above sea level. The surface of the City is undulatory, and the soil is mostly of a sandy or gravelly nature.

### Old and enlarged City.

In 1891 the boundary of the City was extended, so as to include certain outlying districts. At the time of the extension I endeavoured to obtain such information relating to the annexed districts as would make it possible for me to give statistics respecting the enlarged area for a long series of years. But I found it impossible to do this for any years prior to 1886, and all the figures in my report which relate to earlier years than this must be taken as applying to the old City, not to the enlarged area. I have been careful, however, in using figures relating to the two different areas, either to give rates instead of actual numbers or to make allowance for the differences in population. By this plan I think the statistics for the old City may fairly be compared with those for the larger area.

### Population.

The estimated population of the City at the middle of 1895 was 496,751. As I stated in my last Annual Report, I think it very possible this may be too large a figure, but I do not suppose the error is so great as to seriously vitiate the calculations I have made. The area of the City is 12,705 acres, so that there are on an average 39·1 persons to an acre. Before the enlargement of the City its area comprised 8,400 acres, with a mean density in 1891 of 51·2 persons per acre.

### Area.

### Density.

In the following statement the population of the area now included in the City and the mean density of that population is shown :—

		Estimated Population at middle of each year.		Average Number of Persons per acre.
1886	...	458,110	...	36·1
1887	...	462,251	...	36·4
1888	...	466,430	...	36·7
1889	...	470,646	...	37·0
1890	...	474,900	...	37·4
1891	...	479,193	...	37·7
1892	...	483,526	...	38·1
1893	...	487,897	...	38·4
1894	...	492,301	...	38·7
1895	...	496,751	...	39·1

In the course of my report I propose to make comparisons between Birmingham and certain other large towns. It will be interesting, therefore, to see the relative population and density of these towns. They are as follows :—

		Estimated Population, 1895.	No. of Persons to an acre.
33 Large Towns	...	10,591,530	35·3
London	...	4,392,346	58·8
Liverpool	...	503,967	96·7
Manchester	...	524,865	40·7
Birmingham	...	496,751	39·1
Leeds	...	395,546	18·3
Sheffield	...	342,768	17·4
Bristol	...	228,139	51·1
Bradford	...	226,384	21·0
West Ham	...	249,473	53·0
Nottingham	...	226,658	20·7

## MARRIAGES.

The number of Marriages in the City in 1895 was 4,442, Marriages. equal to a marriage-rate of 17·9 per 1,000. In 1894 the rate Marriage-rate was 17·3, in 1893 it was 16·9, and in 1892 17·9.

## BIRTHS.

The Births recorded in the fifty-two weeks comprised for Births. registration purposes in the year 1895 amounted to 16,014, 8,032 being those of males, and 7,981 those of females ; in one instance the sex was unknown. They were equal to an annual Birth-rate of 32·3 per 1,000. This was with two exceptions Birth-rate. the lowest Birth-rate stated in my records. The Births and Birth-rates for the past ten years are shown below :—

		Number of Births.		Birth-rate per 1,000 persons living.
1886	..	15,622	...	34·2
1887	..	15,315	...	33·2
1888	..	15,076	...	32·4
1889	..	15,357	...	32·7
1890	..	15,487*	...	32·1
1891	..	16,166	...	33·8
1892	..	16,026	...	33·2
1893	..	15,881	...	32·6
1894	..	15,505	...	31·6
1895	..	16,014	...	32·3

\*53 weeks.

Birth-rates in  
large towns.

In the ten large towns the Birth-rates were as follows :—

				Birth-rate per 1,000.
33 large Towns	...	...	...	31·3
London	...	...	...	30·5
Liverpool	...	...	...	36·9
Manchester	...	...	...	33·7
Birmingham	...	...	...	<b>32·3</b>
Leeds	...	...	...	31·6
Sheffield	...	...	...	34·9
Bristol	...	...	...	28·9
Bradford	...	...	...	26·1
West Ham	...	...	...	34·3
Nottingham	...	...	...	29·7

It will be seen that only Liverpool, Manchester, Sheffield, and West Ham had higher Birth-rates than Birmingham.

### VACCINATION.

#### Vaccination.

I have received from the Vaccination Officers returns as to Vaccination for the year ending June 30th, 1895. Copies of these returns will be found in Table XI.

I am sorry to find a considerable reduction in the number of successful Vaccinations, the total percentage having fallen from 86·0 to 83·5. This reduction has brought the amount of Vaccination to a lower point than in either of the three previous years. It is chiefly due to an increase in the number of cases not yet accounted for in the Officers' records either as successfully disposed of or as lost sight of. The percentage of such cases rose from 5·2 in the previous year to 6·8. The number of cases lost sight of rose from 8·2 to 8·8. The percentages in different parts of the City will be seen in the table below :—

DISTRICT.	YEAR.	PERCENTAGE OF SURVIVING CHILDREN.			
		Success- fully Vaccinated.	Innsusceptible of Vaccination or had Smallpox.	Unaccounted for, from	
				Removal to places un- known ; and not having been found.	Postponement by Medical Certificate ; Removal to other Vaccina- tion Districts, etc.
Birmingham Parish ...	1892	87·9	0·2	8·6	3·3
	1893	90·2	0·4	6·8	2·6
	1894	90·1	0·4	6·6	2·9
	1895	88·6	0·7	7·1	3·6
Aston Union (within the City) ...	1892	81·3	0·5	12·3	5·9
	1893	81·6	0·5	11·3	6·6
	1894	82·4	0·7	11·0	5·9
	1895	78·9	1·0	11·9	8·2
King's Nor- ton Union (within the City) ...	1892	83·9	0·4	3·8	11·8
	1893	81·4	0·9	2·9	14·7
	1894	79·6	0·8	6·2	13·4
	1895	76·6	1·0	5·8	16·6
Whole City ...	1892	84·9	0·3	9·6	5·2
	1893	86·0	0·5	8·1	5·5
	1894	86·0	0·6	8·2	5·2
	1895	83·5	0·9	8·8	6·8

Vaccination was much more extensively carried out in Birmingham Parish than in Aston and King's Norton Unions, the respective percentages being 88·6, 78·9, and 76·6. In Aston the number of cases lost sight of was much greater than elsewhere, while in King's Norton the instances in which Vaccination had not yet taken place was very excessive. In view of the figures given on page 12 with respect to Smallpox, one cannot feel at all satisfied with the year's work in regard to Vaccination.

### DEATHS.

The Deaths registered during 1895 numbered 9,863, of which 5,154 were those of males and 4,708 those of females; in one instance the sex was unknown. They were equal to a Death-rate of 19·9 per 1,000. In the past ten years the Death-rate has varied from 18·2 to 21·5, and the average has been 20·0, so that the figure for 1895 stood just half way between the highest and lowest rate, and was almost identical with the average.

The following table shows the number of Deaths and the Death-rates for the last ten years:—

		Number of Deaths.		Death-rate per 1,000 Persons living.
1886	...	9,182	...	20·1
1887	...	9,225	...	20·0
1888	...	8,465	..	18·2
1889	...	9,035	...	19·2
1890	...	10,329*	...	21·4
1891	...	10,077	...	21·1
1892	..	9,642	...	20·0
1893	..	10,445	...	21·5
1894	...	8,946	...	18·2
1895	...	9,863	...	19·9

\* 53 weeks.

In order to show what diseases were chiefly implicated in causing variations in the mortality, I have prepared the following table:—

		Deaths in 1895.	Average in 3 years, 1892-4.	Above or below the average.
Enteritis	...	282	151	+131
Diphtheria	...	163	53	+110
Diarrhoea	...	605	509	+96
Old Age	...	510	426	+84
Scarlet Fever	...	133	70	+63
Convulsions	...	241	184	+57
Pneumonia	...	584	771	-187
Measles	...	133	235	-102
Whooping Cough	...	173	275	-102
Smallpox	...	8	80	-72
Bronchitis	...	1,153	1,218	-65

The most noteworthy feature in the above figures is the influence exerted by the zymotic diseases. Three of them, viz., Diphtheria, Diarrhoea, and Scarlet Fever, caused 269 Deaths in excess of the average for the three previous years. Moreover, Enteritis, a disease which is closely allied to Diarrhoea, caused nearly twice as many deaths as usual. On the other hand there was a great falling off in the mortality from Measles and Whooping Cough, while Pneumonia also showed a large decrease.

Death-rates of  
Birmingham  
and large towns  
compared.

		1895.	1894.	1893.	1892.	1891.
33 large Towns	..	20·7	18·1	21·6	20·7	22·2
London	...	19·8	17·8	21·3	20·6	21·4
Liverpool	...	28·8	23·8	27·3	24·7	27·0
Manchester	...	25·2	20·4	24·9	23·8	26·5
<b>Birmingham</b>	...	<b>19·9</b>	<b>18·2</b>	<b>21·5</b>	<b>20·0</b>	<b>21·1</b>
Leeds	...	20·5	17·9	22·3	19·8	22·9
Sheffield	...	20·5	17·8	22·3	20·8	23·9
Bristol	...	18·1	17·3	18·9	19·5	20·9
Bradford	...	19·9	17·0	21·0	18·0	22·2
West Ham	...	17·9	16·2	18·9	18·6	17·8
Nottingham	...	19·0	17·2	18·5	18·7	19·9

The Death-rate in Birmingham was ·8 per 1,000 below that recorded in the 33 large towns. It was also lower than the rates for Liverpool, Manchester, Leeds, and Sheffield, and just equal to that of Bradford. Birmingham stands fifth in the above list; in 1894 it was only eighth, in 1893 sixth, in 1892 sixth, and in 1891 fourth. Its position was thus a little better than usual.

Discrepancies  
between  
Registrar  
General's and  
own figures.

In the Registrar General's Annual Summary the figures relating to Birmingham will be found to differ slightly from my own. This is due to the fact that he adds the Deaths of Birmingham paupers who die in the Aston and King's Norton Workhouses to the Deaths actually occurring in the City. I do not follow this plan, because I think the Deaths of non-residents which take place in Hospitals in the City quite counterbalance the Deaths of Birmingham people who die outside its boundary.

Death-rate in  
each quarter of  
the year.

The mortality in Birmingham in each quarter of the past year was as follows:—

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.
TOTAL DEATHS	2,861*	2,196	2,264	2,542	9,563*
Males	1,454	1,146	1,258	1,296	5,154
Females	1,406	1,050	1,006	1,246	4,708
Death-rate	23·1	17·7	18·3	20·5	19·9

\* One sex unknown.

In the first quarter the Death-rate was an unfavourable one, even for a winter quarter. Very severe weather prevailed during January and February, but it was not until the long

continued frost had broken up that the heavy mortality began, and it appeared to be due to the sudden change of weather. In the second quarter the Death-rate was the lowest I have ever recorded in that portion of the year, a very great reduction occurring in the mortality from Measles and Pneumonia. The third quarter had a medium Death-rate, largely owing to a heavy mortality from Diarrhoea. In other respects the quarter was a healthy one. In the fourth quarter the Death-rate was rather high, most of the zymotic diseases being more than usually fatal. It is curious that out of 133 Deaths from Measles during the whole year, no less than 129 occurred in the fourth quarter.

At the beginning of my report will be found a diagram Charts. showing the number of Deaths on each day of the year, together with certain meteorological conditions observed at the same time. In the appendix there is a chart showing the total Death-rate and the average age at death in each week of the year.

Assuming that the Deaths in large institutions should be distributed over the various wards in proportion to the mortality actually recorded in those wards, I find that the ward Death-rates would be as follows :—

		Estimated Population.	No. of Deaths.	Approximate Death-rate.
Rotton Park	...	40,009	614	18·5
All Saints'	...	39,590	685	20·8
Ladywood	...	27,104	430	19·1
St. Paul's	...	16,765	256	18·4
St. George's	...	21,409	408	22·9
St. Stephen's	...	23,876	517	26·0
St. Mary's	...	15,211	311	24·6
St. Bartholomew's	...	26,622	549	24·8
Market Hall	...	13,096	218	20·0
St. Thomas's	...	20,517	345	20·2
St. Martin's	...	25,530	424	20·0
Edgbaston and Harborne	...	29,591	381	15·5
Deritend	...	26,851	496	22·2
Bordesley	...	43,713	609	16·8
Duddeston	...	23,121	483	25·1
Nechells	...	32,854	572	20·9
Balsall Heath	...	38,277	522	16·4
Saltley	...	27,892	387	16·7

The highest Death-rate was 26·0 in St. Stephen's, followed by 25·1 in Duddeston, 24·8 in St. Bartholomew's, and 24·6 in St. Mary's. Edgbaston and Harborne had the lowest mortality, next in order being Balsall Heath, Saltley, and Bordesley. On looking into the causes of death, I find that in St. Stephen's Ward, Wasting Diseases, Diarrhoea, and Bronchitis were the most prominent factors in the excessive mortality. In St. Bartholomew's Ward, Diarrhoea, with its allied complaint Enteritis, was answerable for a great part of the excess. In St. Mary's, Bronchitis and Wasting Diseases were the chief agents in raising the mortality above that of the whole City,

and in Duddeston, Diarrhoea and Wasting Diseases. It is to be noted that these diseases resolve themselves into those arising from errors in feeding, and those due to exposure to cold, and it is probable, therefore, that the real causes of the high mortality in the wards alluded to were poverty and ignorance, and consequent neglect. The Death-rates in the four wards from each of the diseases mentioned, were as follows :—

	St. Stephen's.	Duddeston.	St. Bartholomew's.	St. Mary's.	City.
Bronchitis	... 3·5	2·4	2·6	3·6	2·3
Wasting Diseases	2·5	2·1	1·1	2·0	1·3
Diarrhoea	... 1·9	2·2	2·1	1·8	1·2
Enteritis	... 0·9	—	1·1	0·9	0·6

**Distribution of deaths amongst the <sup>actual</sup> infants during the last four years :—**

	1895.	1894.	1893.	1892.
Under 1 year ...	2,910	2,539	3,146	2,664
Between 1 and 5 years ...	1,398	1,441	1,306	1,570
" 5 „ 15 „ ...	391	389	334	375
" 15 „ 25 „ ...	386	426	436	343
" 25 „ 45 „ ...	1,287	1,285	1,556	1,289
" 45 „ 65 „ ...	1,863	1,561	1,961	1,812
At 65 years and upwards...	1,628	1,305	1,706	1,589

**Infant mortality.**

The Deaths of infants under one year of age were in the proportion of 182 per 1,000 Births. In the past ten years this figure has only once been exceeded, viz., in 1893, when the proportion was 198 per 1,000. In 1888 it fell as low as 152 per 1,000, while the average number in the ten years 1886–1895 was 172. I have compared the infant Deaths in 1895 with those in the three previous years, and find the chief increases were as follows :—

	1895.	Average, 1892–94.	Increase.
Enteritis ...	203	97	106
Diarrhoea ...	439	383	56
Convulsions ...	198	149	49
Premature Birth ...	375	349	26

It is evident from these figures that bowel complaints were chiefly responsible for the increase in the infant mortality.

**Infant deaths per 1,000 births in large towns.**

The next table shows the infant mortality in the ten large towns :—

	1895.	1894.	1893.	1892.	1891.
33 large towns ...	182	152	181	164	—
London ...	166	143	164	155	154
Liverpool ...	210	179	211	181	188
Manchester ...	203	160	208	179	192
Birmingham ...	182	164	198	166	165
Leeds ...	191	155	206	169	177
Sheffield ...	197	157	191	171	170
Bristol ...	143	150	141	147	146
Bradford ...	203	145	197	155	181
West Ham ...	168	138	170	153	150
Nottingham ...	190	174	170	167	169

The infant mortality in Birmingham was just equal to that of the thirty-three large towns. It was lower than that of Liverpool, Manchester, Bradford, Sheffield, Leeds, and Nottingham. It is to be noticed that in all the towns except Bristol there was a great increase upon the figures recorded in the previous year.

The average age of the persons whose Deaths were registered during 1895 was 28 years and 8 months, against 27 years and 1 month in 1894, and 29 years in 1893. The figures for the four quarters of the year were as follows :—

	1895.	1894.
First Quarter ...	34 years and 5 months.	27 years and 5 months.
Second „ „	31 „ „ 11 „	25 „ „ 4 „
Third „ „	23 „ „ 11 „	27 „ „ 0 „
Fourth „ „	23 „ „ 7 „	28 „ „ 8 „
Whole Year ...	28 „ „ 8 „	27 „ „ 1 „

A Chart at the end of the report shows the weekly variations Chart. in the average age at Death.

### INFECTIOUS DISEASES.

The seven principal Zymotic Diseases—Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever, and Diarrhoea—had 1,299 Deaths attributed to them, against an annual average of 1,263 in the previous nine years. The Zymotic Death-rate was 2·6 per 1,000, and was identical with the average for the nine preceding years. On the whole, therefore, the Zymotic Mortality was satisfactory, though in some of its details it was very much the reverse. Of the individual diseases, Smallpox, Measles, and Whooping Cough caused fewer Deaths than usual, but Scarlet Fever, Diphtheria, Fever, and Diarrhoea were more fatal than they generally are.

The subjoined table affords a comparison of the Zymotic Death-rates in the ten large towns.

	1895.	1894.	1893.	1892.	1891.
33 large towns ...	2·8	2·4	3·2	2·6	—
London ...	2·6	2·7	3·1	2·8	2·3
Liverpool ...	4·0	3·4	3·9	2·9	3·6
Manchester ...	3·7	2·4	3·7	3·0	3·1
Birmingham ...	<b>2·6</b>	<b>2·4</b>	<b>3·0</b>	<b>2·6</b>	<b>2·0</b>
Leeds ...	2·7	2·0	3·5	2·2	2·4
Sheffield ...	3·2	2·3	3·5	3·1	2·7
Bristol ...	1·3	2·0	1·6	2·1	1·9
Bradford ...	2·5	1·8	3·4	1·7	2·3
West Ham ...	3·2	3·2	3·4	2·9	2·3
Nottingham ...	2·2	2·3	2·6	2·3	2·5

The Zymotic Rate in Birmingham was lower than in the thirty-three large towns. Only three towns in the above list—Bristol, Nottingham, and Bradford—occupy better positions than Birmingham with regard to Zymotic Mortality.

## SMALLPOX.

### Smallpox.

### Vaccination and Smallpox.

Eight Deaths were registered during 1895 from Smallpox, of which disease just one hundred cases were notified to me. The year 1895 witnessed the end of the great epidemic which commenced in 1893, the last case reported having occurred on June 29th. From that date to the end of the year the City was entirely free from Smallpox. Of the 100 cases notified, 85 were vaccinated, 14 unvaccinated, and 1 doubtful. Two of the Deaths registered during 1895 were in patients reported in 1894, so that out of the 100 fresh cases there were 6 deaths, all of them, strange to say, amongst the vaccinated. This is an interesting example of the danger of drawing inferences from a small number of observations. For these figures would appear to show that the case mortality is much higher amongst vaccinated than amongst unvaccinated patients. But the real facts as to vaccination will be seen from the following figures, which deal with the total number of cases notified from the beginning to the close of the epidemic, that is, from the commencement of 1893 to the middle of 1895.

	No. of Cases.	No. of Deaths.	Proportion of Deaths to Cases.
Vaccinated	... 2701	121	4·5 per cent.
Unvaccinated	... 343	107	31·2 "
Doubtful	... 109	20	18·3 "

Thus the mortality amongst the unvaccinated cases was really seven times as high as amongst the vaccinated.

As the question of Vaccination is just now exciting a good deal of interest, I have thought it desirable to look into the above figures a little closely in order to see what is the exact effect of the prophylactic on health and life. I have therefore prepared the following table, the headings of which explain themselves :—

AGE PERIODS.	Cases.			Deaths.			Case Mortality per cent.		
	Vaccinated.	Unvaccinated.	Doubtful.	Vaccinated.	Unvaccinated.	Doubtful.	Vaccinated.	Unvaccinated.	Doubtful.
Under 1 year	... 0	55	1	0	38	1	—	69	—
1 to 5 years	... 12	65	7	0	25	0	—	38	—
5 to 10 years	... 84	74	12	0	5	1	0	7	—
10 to 15 years	... 264	40	5	1	3	0	0	7	—
15 to 25 years	... 1095	57	30	20	12	2	2	21	7
25 to 45 years	... 1042	41	35	79	19	11	8	46	31
45 and upwards	... 204	11	19	21	5	5	10	—	—

The first point I wish to call attention to is the practical immunity from Smallpox enjoyed by vaccinated children under 10 years old. We are often told that even if vaccination lessens the probability of a fatal issue—a fact which few find it possible to dispute—it certainly does not reduce the liability to an attack. But the experience of Birmingham proves this to be quite a fallacy. There are in the City something like 118,000 children under 10 years old. The vaccination returns for the last few years show that about 85 per cent. of the children born were successfully vaccinated shortly after their birth; how many more were vaccinated later in life I cannot tell. But at any rate it may safely be assumed that at least 85 per cent. of the children under 10 years of age are vaccinated, so that there must have been about 100,000 vaccinated and 18,000 unvaccinated children in the City during the recent epidemic. Of these 100,000 vaccinated children under 10 years of age 96 took Smallpox, giving a proportion of 1 case per 1,000 children living at that age period; amongst the unvaccinated there were 194 cases, giving a proportion of 11 per 1,000. Thus the unvaccinated children under ten suffered 11 times as heavily from attacks of Smallpox as the vaccinated. It is obvious from these figures that for the first ten years after it has been performed vaccination affords a large degree of immunity from an attack of Smallpox. And for the first five years the degree of immunity is much greater, inasmuch as only 12 vaccinated children under five years old were attacked out of about 48,000 living at that age, or only about one in every 4,000. But amongst the 9,000 unvaccinated children under 5 years one out of every 75 took Smallpox. The experience of Birmingham therefore shows that vaccination confers almost absolute immunity from an attack of Smallpox for the first five years, and practical immunity for the first ten years.

Vaccination and  
Smallpox  
(continued).

I come now to the question of immunity from death, and here the beneficial results of vaccination are still more marked; for amongst the 96 vaccinated Smallpox patients under 10 not a single death occurred, while amongst the 194 unvaccinated cases there were 68 deaths. It appears, therefore, that for 10 years after its performance vaccination conferred absolute immunity from death from Smallpox, although amongst the unvaccinated of all ages the disease had a mortality of over 30 per cent., that is to say, by means of vaccination within ten years from the time of an outbreak the deaths of 30 per cent. of the persons attacked may be prevented.

The City of Birmingham having been pointed to as being a well vaccinated town which has suffered heavily from Smallpox, I should like to say that although the recent epidemic lasted for two years and a half, the total number of cases at all ages was only equal to a rate of about 6 per 1,000 for the whole period. In contrast with this, I may say that in Gloucester, which is a stronghold of the opponents of vaccination, and where the compulsory powers of the Vaccination Acts have been suspended, there had already been 916 cases in the first three months of

the present year, giving a rate of over 22 per 1,000, or nearly four times as many in three months as occurred in Birmingham in the whole two and a half years; moreover, the epidemic, so far from showing any signs of subsiding, was distinctly on the increase. In the week which ended on April 4th there were 215 cases in Gloucester, which, making allowance for the difference in population, would be equivalent to over 2,500 cases in one week in Birmingham. One wonders how, after such a lesson as the present Gloucester epidemic teaches, anybody can be found to throw doubt on the value of vaccination and to oppose the practice of it. Even the popular demand for a Commission of Enquiry appears by the light of it to have been totally unnecessary, and indeed injurious in temporarily impairing the efficiency of the Vaccination Acts and exposing communities to avoidable danger, disfigurement, and death.

**Smallpox in  
years 1872-95.**

The following table shows the number of cases and deaths from Smallpox in Birmingham in the last twenty-four years. The figures for 1872-1891 apply to the City as constituted prior to its extension:—

DATE.		Cases Notified.	Deaths Registered
1872.			
1st Quarter	...	798	96
2nd "	...	632	92
3rd "	...	355	67
4th "	...	192	44
	Total	— 1,977	— 299
1873.			
1st Quarter	...	171	29
2nd "	...	246	37
3rd "	...	124	18
4th "	...	253	38
	Total	— 794	— 122
1874.			
1st Quarter	...	757	123
2nd "	...	1,303	196
3rd "	...	1,059	165
4th "	...	672	153
	Total	— 3,791	— 637
1875.			
1st Quarter	...	366	85
2nd "	...	347	72
3rd "	...	95	14
4th "	...	16	2
	Total	— 824	— 173
1876.			
1st Quarter	...	2	0
2nd "	...	2	0
3rd "	...	2	0
4th "	...	5	0
	Total	— 11	— 0
1877.			
1st Quarter	...	7	1
2nd "	...	20	3
3rd "	...	20	3
4th "	...	3	1
	Total	— 50	— 8

DATE.		Cases Notified.	Deaths Registered.	Smallpox in years 1872-95 (continued).
1878.				
1st Quarter	...	...	3	0
2nd "	...	...	4	0
3rd "	...	...	10	2
4th "	...	...	10	3
	Total	—	27	5
1879.				
1st Quarter	...	...	1	0
2nd "	...	...	0	0
3rd "	...	...	3	0
4th "	...	...	0	0
	Total	—	4	0
1880.				
1st Quarter	...	...	2	0
2nd "	...	...	5	1
3rd "	...	...	8	1
4th "	...	...	3	0
	Total	—	18	2
1881.				
1st Quarter	...	...	5	5
2nd "	...	...	9	1
3rd "	...	...	2	0
4th "	...	...	0	0
	Total	—	16	6
1882.				
1st Quarter	...	...	0	0
2nd "	...	...	43	6
3rd "	...	...	33	9
4th "	...	...	13	2
	Total	—	89	17
1883.				
1st Quarter	...	...	48	7
2nd "	...	...	152	9
3rd "	...	...	567	54
4th "	...	...	435	40
	Total	—	1,202	110
1884.				
1st Quarter	...	...	384	54
2nd "	...	...	64	8
3rd "	...	...	13	1
4th "	...	...	10	1
	Total	—	471	64
1885.				
1st Quarter	...	...	69	12
2nd "	...	...	4	0
3rd "	...	...	9	0
4th "	...	...	2	0
	Total	—	84	12
1886.				
1st Quarter	...	...	1	0
2nd "	...	...	1	0
3rd "	...	...	0	0
4th "	...	...	0	0
	Total	—	2	0
1887.				
1st Quarter	...	...	0	0
2nd "	...	...	1	1
3rd "	...	...	1	0
4th "	...	...	10	1
	Total	—	12	2

Smallpox in  
years 1872-95  
(continued)

	DATE.		Cases Notified.	Deaths Registered.
	1888.			
1st Quarter	...	...	13	0
2nd "	...	...	4	0
3rd "	...	...	1	0
4th "	...	...	0	0
		Total	—	18 — 0
	1889.			
1st Quarter	...	...	0	0
2nd "	...	...	0	0
3rd "	...	...	0	0
4th "	...	...	0	0
		Total	—	0 — 0
	1890.			
1st Quarter	...	...	0	0
2nd "	...	...	0	0
3rd "	...	...	0	0
4th "	...	...	0	0
		Total	—	0 — 0
	1891.			
1st Quarter	...	...	1	0
2nd "	...	...	15	0
3rd "	...	...	23	2
4th "	...	...	8	5
		Total	—	47 — 7
	1892.			
1st Quarter	...	...	0	0
2nd "	...	...	20	0
3rd "	...	...	5	0
4th "	...	...	2	0
		Total	—	27 — 0
	1893.			
1st Quarter	...	...	35	0
2nd "	...	...	245	18
3rd "	...	...	116	9
4th "	...	...	583	43
		Total	—	979 — 70
	1894.			
1st Quarter	...	...	717	66
2nd "	...	...	651	54
3rd "	...	...	305	20
4th "	...	...	401	31
		Total	—	2,074 — 171
	1895.			
1st Quarter	...	...	97	7
2nd "	...	...	3	1
3rd "	...	...	0	0
4th "	...	...	0	0
		Total	—	100 — 8

These figures show that the recent epidemic of Smallpox was much more severe than the one which occurred in 1883-4. It was, however, not nearly so extensive as the visitation of the disease which culminated in 1874.

### MEASLES.

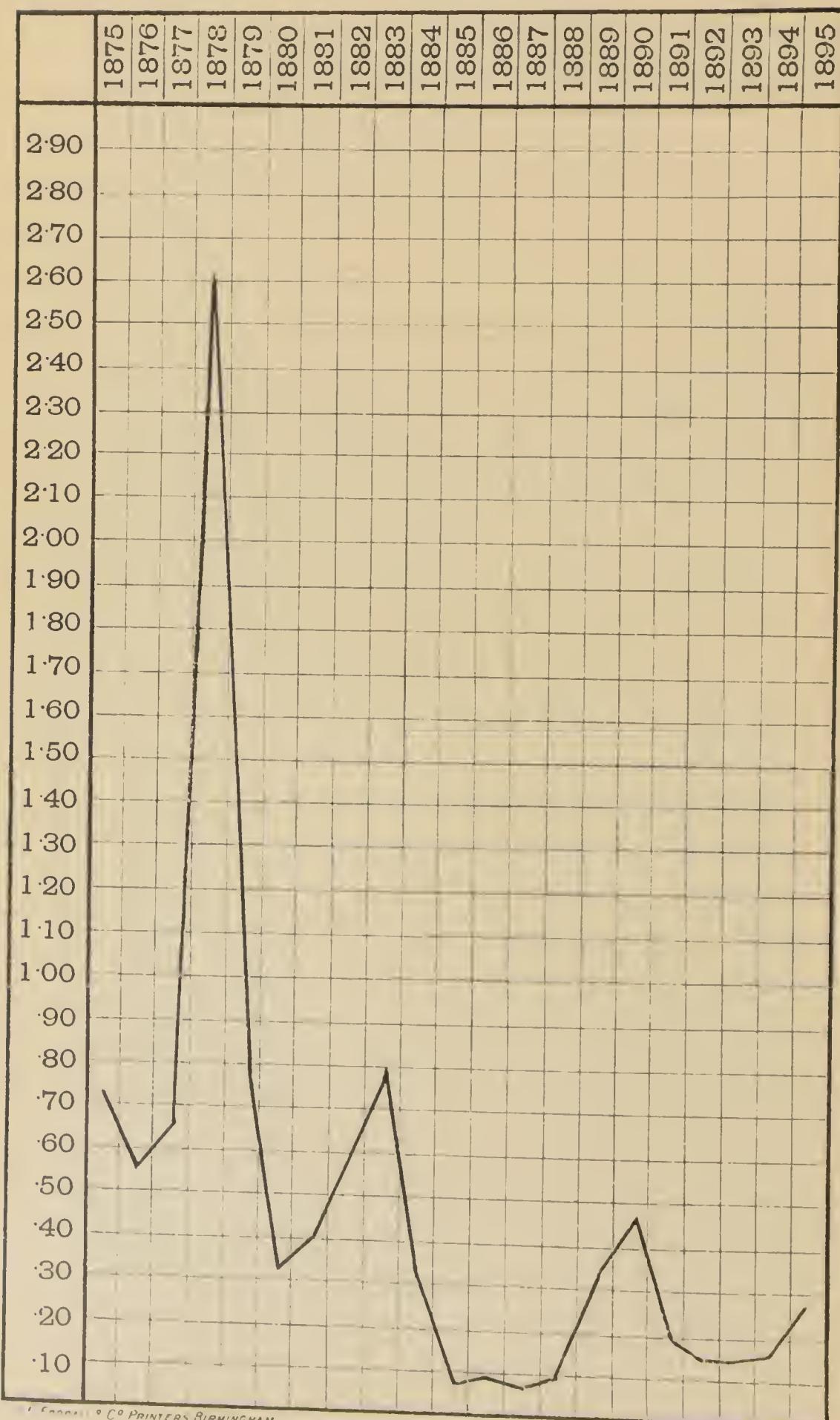
Measles.

The Deaths from Measles numbered 133, against an average of 248 in the nine preceding years. The disease again exhibited the most extraordinary fluctuations; in the first quarter there was not a single death, in the second quarter there was 1, in the third quarter 3, and in the fourth quarter 129. These figures show what I have again and again



# DEATH RATES FROM SCARLET FEVER

PER 1000 PERSONS LIVING.



remarked, that Measles is a disease which spreads from time to time with extraordinary rapidity and dies away again with equal suddenness. The Deaths from Measles are represented on the map at the end of my report by red crosses.

Measles  
(continued).

### SCARLET FEVER.

Scarlet Fever caused 133 Deaths, against an annual average Scarlet Fever. of 89 in the previous nine years. The Deaths were at the rate of .27 per 1,000 of the population, a higher figure than had been recorded since 1890, when the proportion was .45 per 1,000.

The year 1895 was marked by a very extensive prevalence of the disease, and owing to the prominence given to the subject in the press, and to the fact that special means had to be taken to accommodate the enormous number of cases to be removed to the City Hospital, an impression has arisen in some quarters that the recent visitation of Scarlet Fever has been one of very exceptional severity. I think it will be interesting, therefore, if I review the Scarlet Fever history of the City for the 21 years during which Hospital accommodation for this disease has been provided by your Committee.

Dealing first with the mortality, I find that in the period Scarlet Fever death-rates, 1875-95. mentioned there has been an enormous decline in the Death-rate from Scarlet Fever. This may be readily seen from the diagram on the opposite page. The highest Death-rate represented there was 2.61 per 1,000 in 1878, when the "crest" of one of the periodic waves which mark the prevalence of Scarlet Fever occurred. The next "crest" came in 1883, but the Death-rate then was only .80 per 1,000. The third "crest" was observed in 1890, when the Death-rate was .45 per 1,000; and the fourth was apparently reached in 1895, when the Death-rate was only .27 per 1,000. These "crests" serve to divide the 21 years into epidemic periods, in which the Death-rates were as follows:—

1875	.72	{	Average Annual Death-rate, 1.13 per 1,000.
1876	.55		
1877	.63		
1878	2.61		
1879	.78	{	Average Annual Death-rate, .59 per 1,000.
1880	.31		
1881	.41		
1882	.63		
1883	.80		
1884	.32	{	Average Annual Death-rate, .21 per 1,000.
1885	.08		
1886	.09		
1887	.08		
1888	.09	{	Average Annual Death-rate, .18 per 1,000.
1889	.34		
1890	.45		
1891	.20		
1892	.14	{	
1893	.14		
1894	.15		
1895	.27		

Scarlet Fever  
(continued).

Reduced case-mortality of Scarlet Fever.

Thus the Scarlet Fever Death-rate fell from 1·13 in the first epidemic to ·59 in the second, to ·21 in the third, and to ·18 in the last.

This enormous decline in the mortality might of course be due either to a great decrease in the prevalence of the disease, or to such an alteration in its malignancy as would result in a smaller number of Deaths out of as large a number of cases as usual. As complete notification has only been in force since 1890, I have no record of the actual number of cases reported, and therefore cannot give the total case-mortality prior to that date. I have, however, obtained the number of cases and Deaths in the City Hospital in each year, and have calculated the case-mortality in that institution in each of the four epidemics. I find it to have been as follows:—

1875-78	...	...	...	...	...	14·6 per cent.
1879-83	...	...	...	...	...	10·6 "
1884-90	...	...	...	...	...	6·2 "
1891-95	...	...	...	...	...	4·5 "

It appears from these figures that Scarlet Fever has for many years past assumed a less and less fatal form, and much of the decrease in its mortality is due to this fact. It would be very interesting to speculate as to how far the decreased malignancy of the disease has been brought about by improved sanitary surroundings; but what I wish now to point out is that the Death-rate has on the whole diminished to a much greater extent than the case mortality. This will be clearly seen when the figures are placed side by side.

	Average Death-rate per 1,000.	Case Mortality per cent.
1875-78	1·13	14·6
1879-83	·59	10·6
1884-90	·21	6·2
1891-95	·18	4·5

Decreased prevalence of Scarlet Fever.

Comparing the first with the last epidemic, it appears that the Death-rate has been reduced to one-sixth of its original height, while the case mortality has only fallen to one-third. It is obvious, therefore, that the fall in the case mortality only accounts for part of the reduction in the Death-rate, and the rest of the reduction must be due to a decrease in the actual number of cases, *i.e.*, to a lessened prevalence of the disease.

Effect of isolation on Scarlet Fever.

This point is an interesting one in its bearing on the influence exerted by an isolation hospital on the health of the district which uses it. It is supposed in some quarters that while the removal of Scarlet Fever patients to a hospital reduces the mortality from the disease, it does *not* diminish its prevalence. As to the first of these points I have sufficient figures at command to set it at rest at once. Since compulsory notification came in force in the City in 1890, over 10,000 cases have been treated at the City Hospital, and nearly 1,900 have been attended at home. In the hospital 4·9 per cent. of the cases died; at home the percentage was 7·2, or half as high again. If the cases which

Scarlet Fever  
(continued).

were removed to the hospital had died at the same rate as those left at home, there would have been over 230 more deaths in the six years than actually occurred ; in other words, hospital treatment saved the lives of 230 Scarlet Fever patients. Or, to put the case in another way, a patient's chance of recovery was, on an average, half as great again if he went to hospital as if he stayed at home. And this, I think, is not surprising, when it is remembered that in the vast majority of homes in Birmingham it is quite impossible to treat a case of Scarlet Fever in the best manner.

I now wish to say a little about the suggestion that hospital provision does not diminish the prevalence of Scarlet Fever. Unfortunately the actual number of cases is not known for any year prior to 1890, but I have endeavoured to estimate the number of them for each of the four epidemic periods by means of the proportion of cases to deaths observed in the City Hospital. Thus in the first epidemic the case mortality in the City Hospital was 14·6 per cent., or, in other words, there were 100 cases to every 14·6 deaths. If this proportion existed outside the hospital, then the number of cases treated at home would be obtained by dividing the number of deaths at home by 14·6 and multiplying by 100. I have already pointed out, however, that the mortality amongst home treated cases in the past six years has been one and a half times as great as amongst those removed. I shall assume that this proportion held good in each of the epidemics. Then, in the first epidemic, the case mortality at home would be about 22 per cent., that in the hospital having been 14·6. There were 1,623 deaths of patients at home, and dividing this number by 22 and then multiplying by 100, it appears that these 1,623 deaths would represent 7,377 cases treated at home. Add to this 536 cases removed to hospital, and the total number of cases for the four years 1875-1878 may be estimated at 7,913, or 1,978 per annum. Making allowance for the great increase of population since then, this figure would be equal to 2,524 cases per annum in the last epidemic period, viz., 1891-1895.

I have applied this plan to the two succeeding epidemics, and find that the estimated number of cases, corrected for increase of population, was as follows :—

1875-1878	...	...	...	...	2,524 per annum.
1879-1883	...	...	...	...	1,916     "
1884-1890	..	...	...	...	1,469     "
1891-1895	...	...	...	...	1,850     "

The figure for the last epidemic is not an estimate but an actual record. Combining the first two and the last two periods, it appears that the average annual number of cases in the nine years 1875-1883 was 2,186, and of these cases 16 per cent. were treated in the Hospital. In the twelve years 1884-1895, the proportion of cases treated in the Hospital rose from 16 to 77 per cent., and the average number of cases fell from 2,186 to 1,628. In other words, the more extensive use of the City Hospital was accompanied by a greatly decreased prevalence of Scarlet Fever.

**Scarlet Fever  
(continued).**

Distribution of  
Scarlet Fever  
cases.

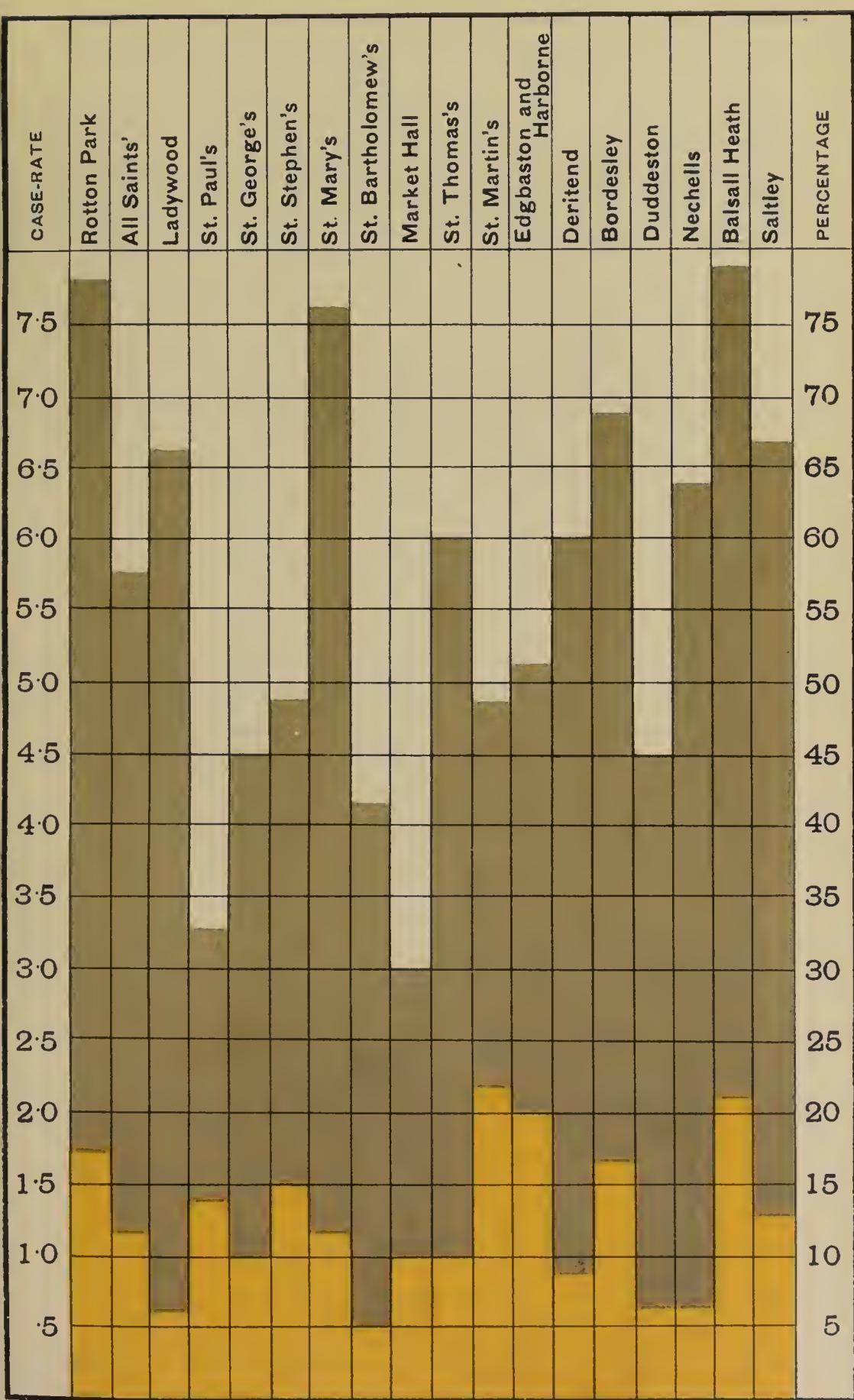
These considerations seem to prove that the provision of Hospital accommodation for Scarlet Fever patients not only greatly reduces the mortality, but also diminishes the prevalence of the disease, and, therefore, not only justifies but demands that every effort shall be made to secure the removal of the largest possible proportion of cases to the City Hospital.

With regard to the incidence of Scarlet Fever upon the different parts of the town, I think the chart on the opposite page will be found of interest. The colouring of the upper part of the diagram shows the relative prevalence of the disease in each ward. It will be seen that Balsall Heath had the greatest number of cases in proportion to its population, followed very closely indeed by Rotton Park and St. Mary's. In fact these three wards may be said to have suffered equally in regard to Scarlet Fever. They have not much in common. They are widely separated from each other, one being on the extreme south, one on the west, and the third almost on the extreme north of the town. They are populated by quite different classes of people, those living in St. Mary's being much poorer than those in Rotton Park and Balsall Heath. There is also a great difference in their general healthiness, for St. Mary's has a Death-rate nearly half as high again as the other two wards. And they cannot be considered to have suffered from proximity to the City Hospital, for although Rotton Park lies very near to that institution, St. Mary's is considerably over a mile away from it, and Balsall Heath is more than two miles distant. Moreover, in All Saints', the ward in which the Hospital is situated, the case-rate from Scarlet Fever was only 5·8 per 1,000, while it was 7·9 in Balsall Heath, 7·8 in Rotton Park, 7·6 in St. Mary's, 6·9 in Bordesley, 6·7 in Saltley, 6·6 in Ladywood, 6·4 in Nechells, 6·0 in Deritend, and 6·0 in St. Thomas's. All these nine wards, scattered as they are all over the City, had more Scarlet Fever cases in them than the ward in which the Hospital is placed, a clear proof that the Institution does not spread Scarlet Fever in its vicinity.

The Scarlet Fever case-rates in the different Wards were as follows :—

Rotton Park ...	...	...	...	...	7·8
All Saints' ...	...	...	...	...	5·8
Ladywood ...	...	...	...	...	6·6
St. Paul's ...	...	...	...	...	3·3
St. George's ...	...	...	...	...	4·5
St. Stephen's ...	...	...	...	...	4·9
St. Mary's ...	...	...	...	...	7·6
St. Bartholomew's ...	...	...	...	...	4·2
Market Hall ...	...	...	...	...	3·0
St. Thomas's ...	...	...	...	...	6·0
St. Martin's ...	...	...	...	...	4·9
Edgbaston and Harborne	...	...	...	...	5·2
Deritend ...	...	...	...	...	6·0
Bordesley ...	...	...	...	...	6·9
Duddeston ...	...	...	...	...	4·5
Nechells ...	...	...	...	...	6·4
Balsall Heath ...	...	...	...	...	7·9
Saltley ...	...	...	...	...	6·7
Whole City ...	...	...	...	...	6·0

# SCARLET FEVER IN 1895.



J.F. Eborall & Co., Printers, BIRMINGHAM

Case-rate per 1000 persons living

Percentage of cases treated at home to

Total cases



The lower part of the chart is coloured to show the percentage of cases left at home in each ward. It is interesting to notice that the wards which treat the largest number of cases at home are St. Martin's (which now includes the whole of the district between Bristol Road and the River Rea), Balsall Heath, Edgbaston and Harborne, Bordesley, and Rotton Park. This, I think, is as it should be, for these are the wards in which isolation at home is most practicable, owing to the better house accommodation existing in them. The diagram does not seem to show at all clearly that any excessive prevalence occurs in wards where a large number of cases are treated at home, though it is true that Balsall Heath and Rotton Park, the two wards in which Scarlet Fever was most prevalent, were also amongst the wards in which the largest number of patients remained at home. On the other hand, St. Martin's and Edgbaston and Harborne had but a comparatively slight prevalence of Scarlet Fever, though a large number of cases were kept at home. But, of course, in these two wards, and more especially in that of Edgbaston and Harborne, very special steps could and would be taken to prevent the spread of infection, and I think that, on the whole, the prevalence of the disease in wards of the same class appears to have been greater where a large number of patients were treated at home than elsewhere.

In the whole City less than 15 per cent. of the cases were treated at home, thus leaving 85 per cent. admitted into Hospital, a proportion which, I believe, is exceeded in very few if any towns, and is not equalled in many.

The question of the mortality at different ages is one of Scarlet Fever at various ages. interest, there being a popular idea that Scarlet Fever is less fatal amongst young patients than amongst those who are older. A result of this impression is that many parents think it is best for children to have the disease early and "get it over," and they accordingly take no means to prevent its spread, and in some instances they rather encourage it. As a fact Scarlet Fever is much more dangerous in the first years of life than in the periods of youth and adolescence, or any subsequent period, so that the longer an attack is postponed the greater the chance of recovery and the saving of life. Almost the whole of the cases last year, 2,864 out of 2,964, occurred in persons between 1 and 25 years old. The mortality amongst them was as follows :—

	Cases.	Deaths.
1—5 years	... ... 937	... 94 or 10·0 per cent.
5—15 „	... ... 1,664	... 26 or 1·6 „
15—25 „	... ... 263	... 6 or 2·3 „

It thus appears that Scarlet Fever is five or six times as fatal to children between 1 and 5 years old as it is to persons of more mature years. I would therefore urge all who have charge of children to take every precaution to prevent their being exposed to the Scarlet Fever infection, inasmuch as even if they do

Removal of Scarlet Fever cases to Hospital.

Scarlet Fever  
(continued).

eventually contract the disease, the older they are the better will be their chance of recovery. Amongst infants under one year old there were only 38 cases last year; a figure too small to draw reliable conclusions from; but 5 deaths occurred at this age-period, giving a mortality of 13·2 per cent.

Map.

The Scarlet Fever deaths are marked on a map at the end of the Report.

Diphtheria  
deaths.

Diphtheria  
death-rate.

### DIPHTHERIA.

Perhaps the most interesting feature in the year's statistics is the extraordinary and unaccountable increase in the prevalence and mortality of Diphtheria. The Deaths rose from an average of 58 in the previous 9 years to no less than 163, equal to a rate of .33 per 1,000. For the next highest Death-rate from this disease I have to look back to 1873, the first year of my appointment, and even then it was only .31 per 1,000. Ever since 1873 Diphtheria had been on the decline, in which respect Birmingham occupied an exceptional position among the large towns; so that one began to hope that in a few years the disease would disappear altogether. The astounding increase observed last year will be clearly seen by glancing at the Chart on the opposite page. With the exception of 1873, 1874, and 1878 no year has had a Death-rate from Diphtheria at all approaching that of 1895. And a curious feature about the increase is the suddenness with which it occurred, 1893 and 1894 being two of the best years on record in regard to this disease, while 1895 proved to be the very worst.

Diphtheria  
cases.

The notified cases did not show quite so large an increase as the Deaths. They numbered 640 against 316, 322, and 456 in 1894, 1893, and 1892, while the Deaths amounted to 163, against 50, 43, and 67. The Deaths were therefore three times as numerous as in the previous three years, while the cases were less than twice as numerous; so that the disease last year must have been not only more prevalent but of a more severe type.

Origin and  
spread of  
Diphtheria.

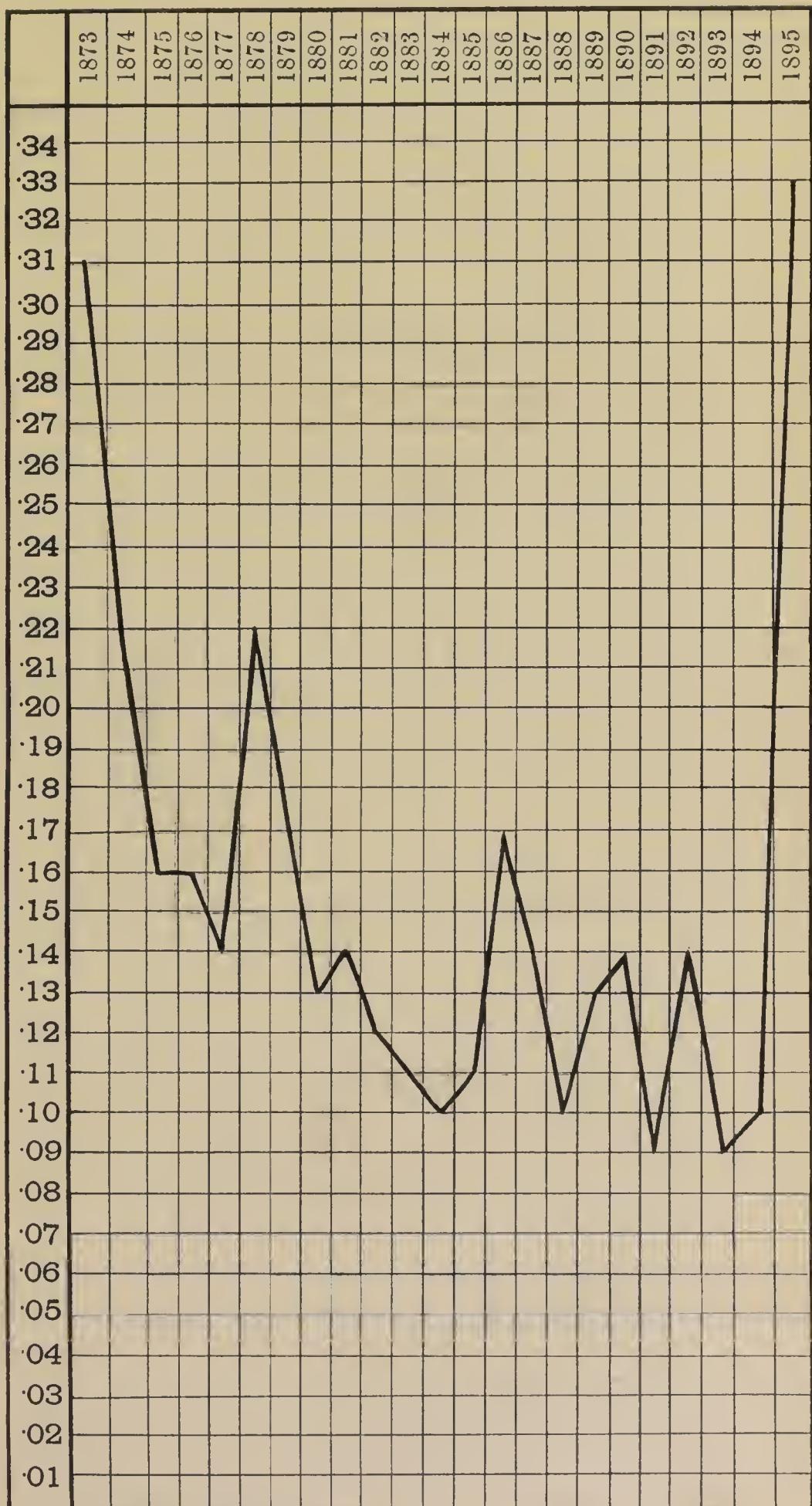
The question of the origin and spread of Diphtheria is as full of mystery as it is of interest and importance. For many years some of our ablest sanitarians have been diligently studying it, but at present without any very marked results. I should like, however, to point out certain facts connected with it, which may be of interest.

Diphtheria and  
insanitary  
conditions.

In the first place the present outbreak cannot be supposed to be directly due to any extension or intensification of the insanitary conditions existing in the town. I do not, of course, mean to imply that defective sanitation may not be a predisposing cause of the disease. I firmly believe that it is so. But the sanitary state of Birmingham was practically the same in 1895 as in 1894, 1893, and 1892, yet the Diphtheria Death-rate

DEATH RATES FROM DIPHTHERIA

PER 1000 PERSONS LIVING.





was three times as high. It is clear, therefore, that sanitary defects could not have been the immediate cause of last year's sudden outbreak, and this conclusion is strengthened by a consideration of the prevalence of Diphtheria in the past. In England and Wales the Diphtheria Death-rates have been as follows :—

3 years, 1858-60	...	...	...	...	•372 per 1,000
5 "	1861-65	...	...	...	•248 "
5 "	1866-70	..	...	...	•127 "
5 "	1871-75	...	...	...	•121 "
5 "	1876-80	...	...	...	•122 "
5 "	1881-85	...	...	...	•156 "
5 "	1886-90	...	...	...	•170 "
4 "	1891-94	...	...	...	•251 "

I think there can be no question that the sanitary condition of England and Wales is better at the present time than at any other period since 1860 : yet the Death-rate from Diphtheria is higher than at any time since that date. Moreover, it is to be noted that the towns most affected by this disease are many of them very healthy in other respects. West Ham, which is now the seventh largest town in England, is a striking example of this, having had last year a Diphtheria Death-rate of •77 per 1,000, against •35 in the thirty-three large towns, while its general Death-rate was only 17.9 against 20.7. London, too, which on the whole has a very good Death-rate, suffers heavily from Diphtheria. It seems, therefore, that there is no very close connection between known insanitary conditions and endemic Diphtheria.

There is a common idea that Diphtheria is more prevalent in better class houses than in inferior ones. In order to test this notion I have tabulated the houses which were invaded by the disease last year, and find that 195 out of 517 consisted of 5 rooms and upwards. So far as I can learn from the census returns, there were in 1891 about 41,000 houses in Birmingham containing 5 rooms or more, out of a total of 95,000. Thus Diphtheria occurred at one out of 170 of the smaller houses, while only one out of 210 of the larger houses was invaded, the larger houses thus suffering considerably less than the smaller ones.

I have also enquired into the incidence of the disease upon houses using respectively ashpit privies, pans, and water-closets. I find that out of 517 houses invaded, 71 had ashpit privies, 247 pan privies, and 205 water-closets, six of the latter having either a pan or ashpit privy as well. I do not know the exact number of houses using each kind of closet, but judging from the actual number of pans and water-closets in existence, I should think that about as many use the one as the other. If this be so, there were rather more cases amongst houses provided with pan privies than amongst those using water-closets. And I

Diphtheria  
(continued).

Diphtheria and  
house  
accommodation

Diphtheria and  
closet  
accommodation.

Diphtheria  
(continued).

find that a secondary case occurred at one out of 11 of the houses having pan closets, and only one out of 29 of the houses using water-closets. These facts appear to show that pan closets favour the introduction of the Diphtheria virus a little, and when it is once introduced, facilitate its spread in a marked degree.

Diphtheria  
and school  
attendance.

I have endeavoured to discover how far the bringing together of a large number of children in schools affects the spread of Diphtheria. Of the 517 houses invaded, there were 163 in which no children attended school, and 168 others in which the patient did not attend school, though other children from the house did so. I do not see how any school influence can be made out in these cases. This leaves 186 patients, who themselves were in attendance at school, out of a total of 517. But these 186 cases occurred in children attending no less than 74 schools, giving on an average a little more than two cases per school per annum; and in only 41 instances had there been a previous case at school within a fortnight. These 41 cases out of 517 may possibly have contracted the disease at school; I do not see the least probability that any of the others did so. I think it must be admitted then that schools have very little to do with the spread of Diphtheria so long as proper precautions are taken to keep away all children from infected houses, as is done in Birmingham.

Diphtheria and  
Harborne Board  
School.

But while this is so as a general rule, there can be no doubt that occasionally a school does become a centre of infection. This was well illustrated last year at Harborne. There had been very little Diphtheria there until October 9th, when the case of a child attending the Board School was notified to me. At intervals varying from one to thirteen days, as many as ten other cases occurred at the school in less than six weeks, and the patients all being very young children, they would of course be closely associated at school. Moreover, between October 9th and November 29th, there were altogether 18 cases of Diphtheria and Croup at Harborne. Of these 18 patients, 13 attended the school, and four out of the remaining five lived with children who went there; so that only one case occurred in the district which did not connect itself either directly or indirectly with the school. From enquiries made, I learned that about nine years before there had been an outbreak of Diphtheria at the same school, and the drainage had been re-arranged. The old drain was disconnected from the sewer, but was not taken out at that time. About the 16th of October this old drain was taken up, when it was found to be full of dry solid matter. This, however, was a week after the first case occurred at the school, so that it does not seem to have originated the outbreak, though perhaps it had some influence on the spread of infection among the scholars. At my request the school buildings were fumigated. During the next month only two cases occurred at Harborne, and neither of these was in any way connected with the school.

To show the distribution of the cases over the City, I have calculated the attack-rate for each ward, which is as follows:—

Rotton Park	...	...	...	1·5 per 1000
All Saints'	...	...	...	3·8 "
Ladywood	...	...	...	1·9 "
St. Paul's ...	...	...	...	1·8 "
St. George's	...	...	...	1·1 "
St. Stephen's	...	...	...	1·0 "
St. Mary's	...	...	...	1·5 "
St. Bartholomew's	...	...	...	0·8 "
Market Hall	...	...	...	0·7 "
St. Thomas's	...	...	...	0·9 "
St. Martin's	...	...	...	0·7 "
Edgbaston and Harborne	...	...	...	1·6 "
Deritend	...	...	...	0·5 "
Bordesley	...	...	...	0·5 "
Duddeston	...	...	...	0·9 "
Nechells	...	...	...	0·9 "
Balsall Heath	...	...	...	0·7 "
Saltley	...	...	...	1·4 "
Whole City	...	...	...	1·3 "

It will be seen that one ward, that of All Saints', has suffered pre-eminently from Diphtheria, its case-rate being more than twice as high as any other. Next in order come Ladywood, St. Paul's, Edgbaston and Harborne, St. Mary's, Rotton Park, and Saltley, all having rates above that for the whole City. It has sometimes been supposed that the more elevated parts of the City suffer more severely from Diphtheria than the rest. With a view to ascertaining the correctness or otherwise of this idea, I have obtained from Mr. Till, the City Surveyor, the height in feet of the highest and lowest point in each ward. This information I now give, side by side with the corresponding case-rates from Diphtheria.

	Highest point.	Lowest point.	Mean of Highest and Lowest.	Diphtheria Case-rate.
Edgbaston and Harborne	675	385	530	1·6
Rotton Park	616	417	516	1·5
Ladywood	506	424	465	1·9
St. Thomas's	504	392	448	0·9
St. Paul's	463	393	428	1·8
All Saints'	473	369	421	3·8
Market Hall	465	355	410	0·7
St. George's	434	362	398	1·1
St. Mary's	432	356	394	1·5
Balsall Heath	439	348	393	0·7
Bordesley	435	336	385	0·5
Deritend	427	341	384	0·5
St. Stephen's	419	340	379	1·0
St. Martin's	403	339	371	0·7
St. Bartholomew's	405	330	367	0·8
Saltley	438	281	359	1·4
Duddeston	394	310	352	0·9
Nechells	378	293	335	0·9

I have arranged the wards in order of elevation from the highest to the lowest. The table shows that there is no definite relation between elevation and the prevalence of Diphtheria. The ward which suffered most of all from the disease was All Saints', and yet there are no less than five other wards which occupy a higher position than this one does. On the

Diphtheria and elevation.

Diphtheria  
(continued).

other hand, the most satisfactory case-rates were in Bordesley and Deritend, which are by no means the lowest wards in the town. Again, the highest point in the City is in Edgbaston and Harborne Ward, and the lowest is in Saltley; yet these two wards had almost identical case-rates from Diphtheria. And this want of constant relationship between Diphtheria prevalence and elevation does not appear to have been peculiar to the year under notice, for I find that in 1894 the highest number of cases occurred in All Saints', Ladywood, and St. Paul's, which are fairly high wards; while in 1893 the greatest prevalence was in St. George's Registration Sub-district, embracing St. George's, St. Stephen's, and St. Mary's, which are rather low wards.

Map.

The Deaths from Diphtheria are indicated on the map at the end of my report.

Membranous  
Croup.

The cases of Membranous Croup numbered 101, against 90, 65, and 77 in the three previous years.

Whooping  
Cough.

Whooping Cough caused 173 Deaths, against an average of 267 in the previous nine years. This disease, to which all too little attention is paid, causes more deaths than either Smallpox, Scarlet Fever, Diphtheria, Typhoid Fever, or Measles. On an average it is responsible for more than one-fifth of the whole zymotic mortality.

Fever deaths.

The Deaths from Fever numbered 84, of which 82 were attributed to Typhoid and 2 were due to Simple Continued Fever. The average number in the nine preceding years was 75. The Deaths were at the rate .17 per 1,000. It will be seen from the figures below that this Death-rate was lower than in 1893 or 1894, but a little higher than in most other recent years. In the earlier years in my records the Death-rate from Fever invariably exceeded .50 per 1,000.

DEATH-RATE FROM FEVER PER 1,000 PERSONS LIVING.										
1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	
.15	.18	.15	.10	.14	.17	.08	.21	.22	.17	

Typhoid Fever  
cases.

The cases of Typhoid Fever numbered 436, against 511, 489, and 260 in 1894, 1893, and 1892. They were distributed over the wards of the city as shown below:—

	Rotton Park	...	...	...	0·9 per 1000
All Saints'	...	...	...	0·7	"
Ladywood	...	...	...	1·1	"
St. Paul's	...	...	...	1·5	"
St. George's	...	...	...	0·7	"
St. Stephen's	...	...	...	0·7	"
St. Mary's	...	...	...	0·5	"
St. Bartholomew's	...	...	...	0·9	"
Market Hall	...	...	..	0·9	"
St. Thomas's	...	...	...	1·2	"
St. Martin's	...	...	...	1·3	"
Edgbaston and Harborne	...	...	...	0·3	"
Deritend	...	...	...	1·6	"
Bordesley	...	...	...	0·4	"
Duddeston	...	...	...	0·8	"
Nechells	...	...	...	0·8	"
Balsall Heath	...	...	...	0·9	"
Saltley	...	...	...	1·1	"

The disease appears to have been most prevalent in Deritend, Typhoid Fever (*continued*). followed in order by St. Paul's, St. Martin's, St. Thomas's, Ladywood, and Saltley. The smallest case-rates recorded were in Edgbaston and Harborne, Bordesley, and St. Mary's. The distribution of this particular disease does not point to high levels as being an important element in its production or spread, but on the contrary, seems to show that its favourite localities are the lower parts of the city, and especially those bordering the river.

The Deaths from Typhoid Fever are indicated on the map Map. at the end of the report.

Four cases of Simple Continued Fever were reported during Simple the year. There was no case of Typhus or of Relapsing Fever. <sup>Continued</sup> Fever cases.

#### PUERPERAL FEVER.

Twenty-four cases were reported to me as Puerperal Fever, <sup>Puerperal</sup> Fever. and 15 deaths were registered from this cause.

#### ERYSIPelas.

The cases of Erysipelas numbered 818, against 772, 852, Erysipelas. and 569 in 1894, 1893, and 1892. There were 22 deaths from this disease, which rarely proves fatal.

#### DIARRHœA.

The Deaths certified from Diarrhœa, including those Diarrhœa. attributed to Simple Cholera, amounted to 605, against an average of 498 in the previous nine years. The greater part of the Diarrhœal mortality occurs in the third or summer quarter of the year, as will be seen from the following figures :—

##### NUMBER OF DEATHS FROM DIARRHœA.

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.
1891	39	34	177	90	340
1892	45	49	292	57	443
1893	39	115	596	78	828
1894	34	38	114	70	256
1895	39	39	410	117	605
Average					
1891-5	39	55	318	82	494

It appears that the increased mortality from Diarrhœa occurred in the latter half of the year, most of it being in the third quarter. This is curious, because it is generally found that Diarrhoea becomes very prevalent in hot, dry weather, whereas the weather during the greater part of last summer was cool and wet. It is true that September had a very high average temperature, but strange to say the Diarrhœal mortality in this month was much smaller than in July and August. Taking the

Diarrhoea  
(continued).

last twelve weeks of the summer quarter and dividing them into two periods of six weeks each, I obtain the following figures :—

	Deaths from Diarrhoea.	Mean Temp. of the air.	Ground Temp. 4ft. deep.	Total Rainfall.	Days on which rain fell.
Six weeks ending Aug. 17th ...	227	58·5	53·2	4·52in.	30
Six weeks ending Sept. 28th ...	167	60·0	55·0	0·87in.	13

In the first six weeks the temperature of the air and of the ground was low, the rainfall was excessive, and yet there were 227 deaths from Diarrhoea. In the next six weeks the temperature both of the air and the ground was much higher, the rainfall was extremely small, so was the number of wet days ; in other words there appeared to be every atmospheric condition present that might be expected to result in a heavier Diarrhoeal mortality, yet the deaths from Diarrhoea numbered only 167, as compared with 227 in the previous six weeks. Dr. Ballard in his exhaustive inquiry into the prevalence of Diarrhoea came to the conclusion that the disease did not become seriously prevalent till after the ground temperature four feet from the surface had reached 56°. But last year this temperature was not reached on a single occasion. In every respect, therefore, Diarrhoea appears to have shown itself capable of causing a very heavy mortality under meteorological conditions quite opposite to those which are supposed to govern both its prevalence and its fatality.

A very curious feature in the mortality returns is the large number of deaths last year from Enteritis, a disease very closely allied to Diarrhoea. It had no less than 282 Deaths set down to it, against an average of 151 in the three previous years. This is a much higher mortality than in any other recent year. Like Diarrhoea, the Deaths were almost confined to young children, 203 being in infants under one year old.

#### DISEASE MAP.

Disease Map.

I have appended to my report a Map of the City, on which the Deaths from Scarlet Fever, Measles, Diphtheria, and Typhoid Fever are indicated by spots and crosses placed upon the streets in which the patients resided. The only feature in the map to which I wish to call attention is the large number of Deaths from Diphtheria in what is known as the Brook-fields, that is, the district lying between Icknield Street and the Birmingham Workhouse. If the number of Deaths can be taken as a guide, it would appear that this part of All Saints' Ward suffered far more from Diphtheria than the rest.

#### CERTIFICATION OF CAUSES OF DEATH.

Certification of  
Causes of Death.

According to the figures given in the Returns published by the Registrar General, over 92 per cent. of the deaths in Birmingham were registered on certificates of qualified Medical Practitioners. In the 33 large towns the percentage was 91. Inquests were held respecting 3·2 per cent. of the deaths, and the remaining 4·8 per cent. were uncertified.

The following table shows the Death-rates from all causes, <sup>Mortality</sup> in 33 large and from Smallpox, Scarlet Fever, Diphtheria, and Fever in towns. Birmingham and in the other thirty-two large towns.

	All Causes.	Death-rate per 1,000 from Smallpox.	Scarlet Fever.	Diphtheria.	Fever.
33 large Towns	20·7	0·01	0·18	0·35	0·20
London...	19·8	0·01	0·19	0·53	0·14
West Ham ...	17·9	0·04	0·18	0·77	0·26
Croydon ...	14·5	—	0·04	0·19	0·12
Brighton ...	18·9	—	0·04	0·15	0·12
Portsmouth ...	17·8	—	0·04	0·11	0·20
Plymouth ...	20·1	—	0·02	0·11	0·08
Bristol ...	18·1	—	0·07	0·15	0·09
Cardiff ...	18·2	—	0·05	0·36	0·10
Swansea ...	18·3	—	0·05	0·12	0·21
Wolverhampton	24·4	—	0·39	0·98	0·20
<b>Birmingham</b>	<b>19·9</b>	<b>0·02</b>	<b>0·27</b>	<b>0·33</b>	<b>0·17</b>
Norwich ...	19·3	—	0·09	0·18	0·24
Leicester ...	17·2	—	0·08	0·18	0·20
Nottingham ...	19·0	—	0·23	0·04	0·24
Derby ...	16·7	0·08	0·08	0·06	0·18
Birkenhead ...	19·5	—	0·15	0·42	0·39
Liverpool ...	28·8	0·03	0·29	0·24	0·37
Bolton ...	24·0	0·01	0·19	0·13	0·45
Manchester ...	25·2	0·00	0·32	0·21	0·19
Salford...	25·6	—	0·47	0·30	0·42
Oldham ...	22·0	0·16	0·11	0·18	0·18
Burnley ...	23·4	—	0·22	0·43	0·30
Blackburn ...	24·3	—	0·06	0·07	0·23
Preston..	23·9	0·01	0·04	0·03	0·20
Huddersfield ...	16·9	—	0·19	0·15	0·06
Halifax...	19·3	—	0·05	0·15	0·17
Bradford ...	19·9	—	0·11	0·09	0·18
Leeds ...	20·5	—	0·13	0·16	0·21
Sheffield ...	20·5	—	0·10	0·15	0·28
Hull ...	20·8	—	0·18	0·17	0·22
Sunderland ...	21·8	—	0·08	0·06	0·96
Gateshead ...	19·6	—	0·15	0·20	0·16
Newcastle ...	20·5	—	0·11	0·25	0·23

Fifteen of the towns mentioned in the above table had a higher general death-rate than was recorded in Birmingham. Very few of them suffered at all seriously from Smallpox, Oldham being the only town with a death-rate exceeding 0·1 per 1,000. With regard to Scarlet Fever, Birmingham had rather a bad position amongst the great towns, only four of which had a heavier mortality from this disease. Only six towns had a higher Diphtheria death-rate than this City, but no less than twenty-three had a greater mortality from Fever, including Typhus, Typhoid, and Simple Continued. Except in the case of Birmingham, the figures in the table are taken from the Registrar General's Annual Summary.

TABLE OF DEATHS REGISTERED IN THE CITY OF BIRMINGHAM DURING THE YEAR ENDING DECEMBER 28TH, 1895.

	WARDS.	AGES.						Institutions.	City.
		0-1	1-5	5-15	15-25	25-45	45-65		
ALL CAUSES	...	...	...	391	386	1,287	1,863	2,910	1,398
<b>I.—Specific Febrile or Zymotic Diseases.</b>									
1.—Miasmatic Diseases.									
Small-pox	"	"	"	"	"	1	22	13	3
Measles	"	"	"	"	"	97	26	1	4
Scarlet Fever	"	"	"	"	"	5	94	1	2
Typhus Fever	"	"	"	"	"	64	100	9	1
Whooping Cough	"	"	"	"	"	8	97	52	3
Diphtheria	"	"	"	"	"	3	49	8	..
Membranous Croup	"	"	"	"	"	1	1	1	..
Simple Continued, or Ill-defined Fever	"	"	"	"	"	1	1	19	20
Enteric or Typhoid Fever	"	"	"	"	"	5	6	3	8
Influenza	"	"	"	"	"	6	8	5	3
Other Miasmatic Diseases	"	"	"	"	"	2	8	1	..
2.—DIARRHEAL DISEASES.									
Simple Cholera	"	"	"	"	"	5	4	1	2
Diarrhoea, Dysentery,	"	"	"	"	"	434	113	1	1
3.—MALARIAL DISEASES.									
Remittent Fever	"	"	"	"	"	..	..	..	..
Auge	"	"	"	"	"	..	..	..	..
4.—ZOOGENOTIC DISEASES									
Cowpox and effects of Vaccination	"	"	"	"	"	..	..	..	..
Other Diseases (e.g., Hydrocephalus, Glanders, Splenic Fever)	"	"	"	"	"	..	..	..	..
5.—VENEREAL DISEASES.									
Syphilis	"	"	"	"	"	..	..	..	..
Gonorrhœa, Stricture of Urethra	"	"	"	"	"	31	2	1	..
6.—SEPTIC DISEASES.									
Erysipelas	"	"	"	"	"	14	..	..	..
Pyæmia, Septicæmia	"	"	"	"	"	1	1	2	..
Puerperal Fever	"	"	"	"	"	..	4	11	..
II.—Parasitic Diseases.									
Thrush, and other Vegetable Parasitic Diseases	8	..	..	..	..	..	..	..	..
Worms, Hydatids, and other Animal Parasitic Diseases	..	..	..	..	..	..	..	..	..
	a	b	c	d	e	f	g	h	i



TABLE OF DEATHS REGISTERED IN THE CITY OF BIRMINGHAM DURING THE YEAR ENDING DECEMBER 28TH, 1895—(continued).



## METEOROLOGY AND MORTALITY.

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### Meteorology.

The weather of 1895 presented some very extraordinary features. Perhaps the most remarkable of them was the severe and long continued frost experienced in January and February. This commenced on January 26th and lasted till February 22nd, a period of 28 days. During this time the temperature at 9 a.m. never exceeded  $33^{\circ}$ , and one morning it fell to  $9^{\circ}$ , or 23 degrees below freezing point. The lowest night temperature recorded was  $8^{\circ}$ , being nearly three degrees below the previous minimum. The great discomfort attending this severe weather was aggravated by the fact that in many places the water in the mains became frozen, and no water could be obtained beyond what was delivered by means of water carts. Out-door water-closets were rendered useless, and in many cases closets situated inside the houses were also blocked by the frost. Notwithstanding all this, however, the health of the town remained good, the weekly Death-rates recorded in January and February giving an average of 21.2. But early in March a great change took place. The weather became warm and wet, and as a result, perhaps, of the sudden transition, the Death-rate rose to a much higher level, Influenza making its appearance, and being accompanied by a large mortality from Respiratory diseases. These movements in the Death-rate and the corresponding variation in temperature may be seen by glancing at the chart at the beginning of my report.

Another unusual feature is found in the fact that September, not July or August, was the warmest month of the year, its mean temperature being no less than  $5^{\circ}2$  above the average. I have pointed out, in another part of this report, that in spite of this condition the heaviest Diarrhoeal mortality occurred in July and August, a curious exception to the general rule that the greatest prevalence of Diarrhoea corresponds with the highest thermometric readings recorded in the air, and still more notably with those of the ground.

I have already stated that the lowest temperature observed during the year was  $8^{\circ}0$ , the minimum in the previous eight years having been  $10^{\circ}8$ . The highest temperature was  $81^{\circ}8$ , and it occurred as late as September 24th. In the previous eight years the maximum temperature was  $85^{\circ}6$ , and was observed on August 18th, 1893. The mean temperature for the year was  $46^{\circ}7$ , or  $0^{\circ}5$  below the average. Of the individual months September was exceptionally warm, and May and November were also considerably warmer than usual. February was the coldest month, its mean temperature being no less than  $10^{\circ}4$  below the average. January also was very cold, being  $5^{\circ}9$  below the average.

The total amount of sunshine recorded was 1,240 hours, or 147 hours in excess of the average. September, May, and June were responsible for this excess, all three months being favoured with a great deal more sunshine than usual.

The rainfall for the year was just a trifle above the average. January was exceptionally wet, the amount of rain being more than double the ordinary quantity. The smallest rainfall was in February, when less than one-third of an inch was measured.

The following table shows the mean temperature and total rainfall for each month of the year:—

MONTHS.	TEMPERATURE.			RAINFALL.		
	Mean Temperature in Degrees and Parts.	Average for 8 years, 1887-1894 inclusive.	Above or below the average.	Rainfall for Month in Inches and Parts.	Average for 8 years, 1887-1894 inclusive.	Above or below the average.
January .....	30°6	36°5	-- 5°9	3.92	1.53	+ 2.39
February.....	27.5	37.9	-10.4	0.32	1.20	- 0.88
March .....	40.4	39.9	+ 0.5	1.91	1.44	+ 0.47
April .....	45.5	44.6	+ 0.9	2.37	1.53	+ 0.84
May .....	53.9	51.1	+ 2.8	0.82	2.27	- 1.45
June .....	58.0	57.5	+ 0.5	0.89	1.96	- 1.07
July .....	58.5	59.0	- 0.5	3.25	2.45	+ 0.80
August .....	59.2	58.7	+ 0.5	2.75	3.00	- 0.25
September .....	59.9	54.7	+ 5.2	0.45	1.87	- 1.42
October .....	44.8	47.0	- 2.2	2.81	2.66	+ 0.15
November .....	44.6	42.7	+ 1.9	3.41	2.35	+ 1.06
December .....	38.0	37.3	+ 0.7	1.99	2.03	- 0.04
Year .....	46.7	47.2	- 0.5	24.89	24.29	+ 0.60

On the next page will be found a table giving certain weekly meteorological data, side by side with the mortality statistics for the same period, and at the beginning of my Report there is a chart showing the relations of the number of Deaths to the principal meteorological conditions on each day of the year. Further particulars as to the temperature of the air and the ground, the degree of humidity, the amount of wind, and the quantity of bright sunshine are given in Table VI. in the appendix.

METEOROLOGY, BIRTHS, DEATHS, AND MORTALITY FROM CERTAIN  
PREVALENT DISEASES FOR EACH WEEK OF 1895.

## II. SANITATION.

i.—*Influences affecting or threatening to affect injuriously the public health.*

During 1895 I made representations to you under Part II. of the Housing of the Working Classes Act, that the following houses were in a state so dangerous to health as to be unfit for human habitation :—

- 3 houses in front, and 5 houses in 36 Court, Camden Street.
- 5 houses in 1 Court, Graham Street.
- 11 houses in 9 Court, St. Martin's Street.
- 6 houses at the back of 121, Moseley Street.
- 5 houses known as Camp Hill Cottages, Camp Hill.
- 2 houses in 14 Court, Bishopsgate Street.
- 5 houses in 13 Court, Bishopsgate Street.
- 6 houses at the back of 44-49, Richard Street.

Generally speaking these houses were small, damp and old. Most of them were dirty and had been allowed to fall into a bad state of repair. In the case of the property in *Camden Street* the necessary repairs were not attempted, and a closing order was therefore obtained from the Magistrates. At the time of writing the houses remain unoccupied.

The property in *Graham Street* consisted of five houses. Four of these were back-to-back with each other. They have now been so altered as to form two houses of double the original size, with through ventilation. Damp courses have been put in all the walls, and the brickwork has been pointed ; between the end of one house and the ground in the higher part of the yard a cavity has been made to prevent the absorption of moisture from the earth. The roofs have been re-slated, the chimneys have been re-built, and new spouting has been provided. The woodwork has been repaired, and as a matter of course the walls have been cleansed and re-papered. The yard has been paved all over, gully traps have been put in, and the outhouses have been repaired. The houses are now in good condition, though I regret that number 5, which is an obstructive building, was not pulled down.

In *9 Court, St. Martin's Street*, the roofs have been stripped, the chimneys re-built, and spouting provided. The walls have been plastered inside and pointed outside, and damp courses have been introduced. The floor quarries have been relaid in cement, and the houses have been limewashed, painted and papered throughout. The yard has been paved, and the six pan privies have been replaced by water-closets. The houses are now in fairly good condition, and permission has been given to re-open them.

Housing of  
the Working  
Classes Act  
(continued).

At Back 121, Moseley Street, the roofs and spouts have been repaired. Damp courses have been put in, and the wall has been doubled in thickness between Number 5 and the disused shopping at the back of it. A cavity wall has also been built at the back of Number 6, and the floors have been relaid in cement, all these alterations being necessary to ensure dryness. The houses have also been cleansed throughout. An ashplacee has been provided, the privies have been repaired, and the property is now in a sufficiently good condition to allow of its being re-occupied.

At Camp Hill Cottages the necessary work was not done until summonses had been taken out against the owner. Before the hearing of the case, however, the roofs and spouts were put in order, the floors were relaid, damp courses were put in, the lower parts of the walls were cemented, and cavity walls were built in two of the houses to obviate direct contact with the soil of the high ground adjoining. The houses were cleansed, and the necessary internal repairs were carried out. In view of these alterations the Magistrates, on my representation, allowed the summonses to be withdrawn on the owner paying the costs.

The two houses in 14 Court, Bishopsgate Street, were furnished with damp courses, the floors were relaid, chimneys re-built, and roofs put in order. The gable end of one house, which was badly bulged, was re-built. The yard was paved, and the outhouses repaired.

At 18 Court, Bishopsgate Street, the gable end of one house which was badly bulged has been repaired, and the houses have been limewashed. This work is altogether insufficient to make the property fit for habitation, and application will accordingly be made for a closing order.

At Back of 44-49, Richard Street, the houses have been cleansed, two gully traps have been substituted for bells, and the privies and wash-houses have been repaired. The property requires a great deal more alteration to make it habitable, and the owner has asked for an extension of the time allowed him by the Act, in which he promises to make such improvements in the houses as will make them fit for occupation.

Unhealthy  
area in  
Milk Street.

On February 21st a Local Government Board Inquiry was held as to the proposal to declare a certain site in Milk Street to be an unhealthy area. I had previously made an official representation to this effect under Part I. of the Housing of the Working Classes Act. I attended the inquiry and gave evidence to the effect that while the property was not all in an equally bad state, none of it was in good condition, and in dealing with the worst property it would be necessary to include all the area.

I summarised the defects as follows :—

Unhealthy  
area in  
Milk Street  
(continued).

1. Bad arrangement or distribution of the buildings over the area, causing the dwellings in most cases to be crowded, and yet resulting in some places in waste of land surface.
2. Houses back-to-back ; dark, owing partly to obstructive buildings ; damp, and ill-ventilated ; having low ceilings ; windows with broken panes, in some cases stopped up with paper or rags ; woodwork of window frames broken, and occasionally a sash altogether wanting.
3. Yards either unpaved and sodden with filth, or with pavement and gutters defective. In several of the entrances to courts the pavement is so sloping and defective as to be unsafe to walk over.
4. Houses and wash-houses more or less dilapidated as to roofs, walls, floors, and sinks, some of the houses and some shopping being actually in ruins.
5. Walls and floors damp from defective spouting or from the total absence of spouting, from want of damp-courses in the walls, and from the floors being of porous quarries laid in direct contact with the damp ground ; also from defective roofs admitting rain.
6. Obstructive buildings ; viz., No. 1 in 9 court, and No. 1 in 10 court, Milk Street, which are only 7 feet and 9 feet respectively from other dwellings.

The results of these conditions were deficiency of air, ventilation, and light ; together with much dampness and organic impurity. I therefore expressed the opinion that the narrowness, closeness, bad arrangement and bad condition of the houses ; the want of light, air, and ventilation ; with the other sanitary defects described ; were dangerous to the health of the people living on the area, and could not be effectually remedied otherwise than by an improvement scheme for the re-arrangement and re-construction of the streets and houses within such area.

On Saturday, February 16th, I had a census taken of the population on the area. From the number of Deaths which occurred there during the last three years I estimated the Death-rate, and found it to be 38·5 per 1,000 per annum, or nearly twice as much as the Death-rate for the whole City for the same period, which was 19·9 per 1,000. I may add that owing to the character of the population of this area compared with that of the City generally, I have reason to believe that the estimate was somewhat below the actual truth.

The average number of persons per inhabited house was five (4·85), so that there was no personal overcrowding.

## Sanitary Work.

In addition to the work done under the Housing of the Working Classes Act, I examined a considerable number of houses which were not so bad as to require closing. A very large number of minor sanitary improvements, such as were required at these houses, were made during the year. They are specified in Table V. In order to prevent the emission of objectionable gases in proximity to houses, 1,699 yard drains were efficiently trapped; while 3,961 drains which had become obstructed were opened and cleansed. As many as 107 drain openings in cellars were either cut off from the sewer or altogether abolished, making a great improvement in the healthiness of the houses concerned. One hundred and sixty sink pipes which discharged directly into the drains were disconnected, and proper glazed bendpipes were fitted to 458 sinks to prevent the fouling of the brickwork around the outlet. In addition to 2,392 houses which were disinfected after infectious disease, 1,427 were cleansed and whitewashed on account of their filthiness, while 1,621 houses were made more healthy and comfortable by various repairs. Twenty cases of over-crowding were found and remedied; in one of these a case of Typhoid Fever had occurred at a house in which it was found that two families, comprising two adults and ten children, were living in three rooms. Offensive urinals to the number of 735 were put in order. The paving of 449 back yards was improved, in my opinion a very necessary work, and one which ought to be greatly extended. Nuisances from fowls were abated in 241 instances, and from swine in 119. No less than 796 accumulations of offensive matter, such as manure, pig wash, etc., were removed.

Nuisance from  
ashpits and  
privies in Upper  
Highgate  
Street.

During the year notices were served upon the owner of a property in Upper Highgate Street to abate the nuisance arising from 7 midden ashpits, with 20 privies attached to them.

The first ashpit was highly offensive; liquid filth ran through the privy walls on to the surface of the yards, and also saturated the risers of the privy seats. Rain water drained into the ashpit from the privy roof, the pit being uncovered. The back wall of the privies was bulged and "tied," the mortar was out of the joints and some of the bricks were loose. The back wall of the ashpit was also the back wall of two wash-houses, and had two furnaces built against it, which by their heat aggravated the nuisance arising from the pit.

The second ashpit was in a similar condition. Urine soaked through the risers on to the privy floors, the back wall was bulged, the mortar was bad, and the bricks were loose.

In the privies connected with the third ashpit three of the risers allowed urine to soak on to the floors, where it lodged owing to defective paving. The mortar was out of the joints, and the bricks were loose in the back walls. Rain water drained into the ashpit, which was uncovered.

Nuisance from  
ashpits and  
privies in Upper  
Highgate  
Street  
(continued).

In the privies connected with the fourth ashpit the risers were defective, allowing urine to escape on to the floors, and the back wall of the privies had defective joints and loose bricks. The ashpit was not covered.

The back wall of the fifth ashpit was bulged, some of the bricks had fallen out and others were loose. The privy risers were saturated with urine, which was soaking through one of them. The pit had no cover to keep out the rain.

The sixth ashpit contained liquid filth, and adjoined the wall of the playground of Highgate Board School, which was discoloured right through. The pit was uncovered.

The seventh contained liquid filth; the back wall was defective, the bricks being loose and the mortar out of the joints. Urine soaked through the privy risers. The pit had no cover over it.

These seven ashpits, with the twenty privies attached to them, were used by 273 persons living in 46 houses. As the owner did not comply with the notices served on him he was summoned, and was ordered by the Magistrates to do the necessary work to the satisfaction of the Sanitary Authority. He appealed against this decision, and his appeal was heard by the Recorder at the Quarter Sessions. The hearing occupied the Court for the whole of one day, a considerable number of witnesses being called on either side. In the end the decision of the Magistrates was upheld, the appeal being dismissed with costs against the appellant.

The substitution of the water-carriage for the conservancy system is being gradually proceeded with. Last year 1,083 privies attached to 678 midden ashpits were converted into water-closets; 248 pan privies were also re-constructed. The total number of water-closets put in at the instance of your officers, including a large number of additional ones provided for Public Houses, was 1,485, of which 59 were of the waste-water pattern. The amount of work done in maintaining privies of the older type is still very large. Last year 1,810,443 pans were emptied, and 70,033 loads of aslies were collected at the same time. As many as 45,291 loads of night soil were dealt with in emptying 25,533 ashpits. The loads of dry ashes collected from places where water-closets are in use was 37,559.

Abolition of  
Conservancy  
system.

Nightsoil and  
Refuse disposal

During the year I received a number of complaints of smell from sewer openings in various parts of the town. These I forwarded to the City Surveyor, who took whatever steps were possible to obviate the nuisance.

Sewer.  
Openings,  
complaints of  
smell from.

In May I received a letter from the Secretary of the Birmingham Exchange complaining of the nuisance arising from a drain which had been opened in the carrying out of some alterations at King Edward's School, New Street. It was found to be impossible to complete the work of relaying for at least a week, and the contractor was therefore asked to cover up the opening as far as possible with boards and tarpaulin so as to prevent the escape of objectionable gases.

**Impure Building Site.**

In August my opinion was asked upon the suitability for building purposes of a site in Taunton Road, which had formerly been used as a night soil tip. I visited the site referred to and found that the ground was very impure, being charged with materials which were only very slightly rotted. I took a sample of the soil, which had a slightly faecal smell and evolved ammonia on heating; it contained particles of straw, paper, rag, etc. I therefore expressed the opinion that the land ought not to be built upon unless the impurities deposited there were first removed, and that concreting the surface without such removal would not be sufficient protection against danger to health.

**Nuisance from gas lime.**

During the year my attention was again called to the disused claypit in Couchman Road, Saltley, to which I referred in my Annual Report for 1894. In that report I pointed out that the nuisance was due to the tipping of gas lime in the pit. This practice was subsequently discontinued, but when I visited in April, 1895, it had been resumed and was being actively carried on again. I recommended that steps be taken to prevent the deposit of gas lime in the pit as the only practicable way of dealing with the matter. My opinion was asked as to the possibility of deodorizing the water collected in the pit. After experimenting with the samples forwarded to me, I concluded that deodorization would be best effected by the addition of crystallized sulphate of iron (copperas) to the water. It was estimated, however, that there were 1,800,000 gallons of water to be dealt with, a quantity which I calculated would need 44 tons of sulphate for its purification.

*ii.—Examination of and action in regard to Suspected, Diseased, and Unwholesome Food.***Unwholesome Food.**

The returns made by the Superintendent of Markets, Mr. Edwards, show that 1,589 surrenders and 17 seizures of bad meat were made during the year. The total quantity destroyed weighed 181 tons. Three persons were fined for offering bad meat for sale, the penalties amounting to £22.

The number of surrenders of fish, game, poultry, rabbits, etc., amounted to 587, and the seizures to 7. Four dealers were summoned, and fines amounting to £15 10s. were imposed on them.

Over thirty-one tons of bad fruit was either handed over to the Inspectors or was seized by them.

*iii.—Duties under Special Sanitary Bye-laws and Regulations.***LODGING HOUSES.****Lodging Houses.**

In accordance with the provisions of the Public Health Act a register is kept of all Lodging Houses in the City. During 1895 the number of Common Lodging Houses fell from 79 to 78. These 78 houses can accommodate 1,777 lodgers.

The houses let in lodgings fell from 83 to 80; they are registered to hold 457 lodgers. To enforce the bye-laws respecting these houses they are frequently inspected by the Lodging House Inspector and by the District Inspectors. Last year 13,234 visits were paid to them by day and 1,665 by night. Four serious breaches of the Regulations were discovered. They comprised: (1) Failure to keep the floors, etc., in a clean condition; (2) neglecting to open windows before 10 a.m.; (3) overcrowding, and allowing two males over 10 years old to occupy the same bed; (4) neglecting to sweep rooms and empty chamber utensils before 10 a.m. For these offences the fines inflicted were 10s. and 9s. costs in the first two cases, 40s. and 11s. costs in the third case, and 10s. and 8s. costs in the fourth.

#### SLAUGHTERHOUSES.

The officers of the Markets and Fairs Committee are responsible for the inspection of Slaughterhouses. They paid 9,586 visits to them last year, and ordered 27 to be cleansed.

Five persons were summoned for infringements of the regulations. They were all convicted, and were ordered to pay fines amounting to £8.

#### DAIRIES, COWSHEDS, AND MILKSHOPS.

At the end of 1895 there were on the register 23 dairies, 71 cowsheds, 2,016 milkshops, and 75 purveyors of milk. During the year 291 applications for permission to open milkshops were received, of which 204 were granted and 87 refused. The visits paid to dairies numbered 185, to cowsheds 2,294, and to milkshops 4,185. Orders were given to limewash 46 shops, 69 cellars, and 7 pantries in which milk was kept. The sale of lamp oil was stopped in 28 instances, of tripe in 16, of fish in 5, and of vinegar and pickles in 59 instances. Dirty vessels for holding milk were found in 4 cases. No case of Pleuro-Pneumonia in cattle was found.

One case of Smallpox, 11 of Scarlet Fever, 2 of Typhoid Fever, 3 of Diphtheria, and 2 of Erysipelas occurred at places connected with the milk trade. In each case the stock of milk was destroyed, and the business was suspended till disinfection had been carried out.

#### BAKEHOUSES.

The visits paid to Bakehouses numbered 1,154. In 130 instances limewashing was ordered. Notice was sent to H.M. Inspector of Factories of the employment of 79 youths in bakehouses. The bakehouses were generally in good order, none of them having drain openings inside, nor closets in direct communication. No accumulations of refuse were found, nor any animals inside the bakehouses. No bakehouse was used

Lodging  
Houses  
(continued).

Dairies, Milk-  
shops, and  
Cowsheds.

Pleuro-  
Pneumonia

Bakehouses

Bakehouses  
(continued).

for any other purpose, and none communicated directly with any sleeping room. By Section 27 Sub-section 3 of the Factory and Workshop Act, 1895, it is enacted that "a place under ground shall not be used as a bakehouse unless it is so used at the commencement of this Act." There are about 32 underground bakehouses in Birmingham, of which 10 were not in use at the time of the passing of the Act. In these cases I have sent notice to the owners that they must not be opened again as bakehouses.

### WORKSHOPS.

Workshops.

The visits paid to Workshops numbered 8,911, and they resulted in 1,146 improvements being made. These included the cleansing of 891 shops, the provision of 57 extra water-closets for females, the putting in order of 48 defective water-closets, the conversion into water-closets of 26 ashpits and privies, as well as of 7 pan privies, the provision of 16 urinals and 8 lavatories, and various improvements in drainage and ventilation. These alterations must, I think, materially affect the health and comfort of the workers. Two hundred and thirty-seven workshops were fumigated after the occurrence of Smallpox amongst the workpeople.

### SMOKE NUISANCES.

Smoke  
Nuisances.

In a manufacturing town like Birmingham there is need to take special precautions to prevent as far as possible the emission of dense smoke from factory chimneys. Last year 4,526 observations were made, with the result that 122 persons were reported for breaking the regulations. Letters of caution were sent to 79 of them, and the remaining 43, having been previously cautioned, were prosecuted. Three of the summonses were withdrawn; in the other 40 cases convictions were obtained, the fines amounting to £18 10s. and the costs to £20 7s.

### CANAL BOATS.

Canal Boats.

At the end of the year there were 398 boats on the register of your Authority, 35 having been registered during the year and 36 certificates of registration having been cancelled.

The number of inspections made was 738. The boats inspected had on them 1,177 men, 386 women, and 456 children. Eighty-seven notices issued in respect of infringements of the regulations were complied with. Of these, 10 were in reference to want of registration, 19 to absence of certificates, 21 to the proper marking of the names and numbers of the boats, 8 to overrowing, 10 to provision for separating sexes, 2 to want of cleanliness and ventilation, 6 to painting and repairing, 11 to the provision of a sufficient quantity of drinking water, and 1 to the removal of bilge water. Three boats were fumigated and cleansed after the occurrence of Infectious Disease in them.

iv.—*Offensive Trades.*Offensive  
Trades.

At the request of your Committee I visited and inspected the premises adjoining 81, Bracebridge Street, in regard to which an application had been made for permission to carry on an offensive trade. The trade in question was that of the manufacture of lubricating grease. The materials used were animal and vegetable fats, together with lime. The process had only been carried on to a small extent, though there was ample room for large extension. Complaints had been made by neighbours of nuisance arising from it, and that the operation was not free from danger was proved by the fact that a fire had previously occurred on the premises, owing to the ignition of the material during manufacture. The business had formerly been carried on outside the City, but had been conducted on the site in Bracebridge Street for about two years. As it came under the head of offensive trades, I recommended your Committee to adopt the usual course of discouraging any increase of such establishments within the boundaries of the City, and the sanction of your Committee was withheld.

I was also asked to inspect some premises in Banbury Street, where it was proposed to carry on the business of artificial manure making. I visited the works and made enquiries as to the materials used, the processes carried on there, and the character of the manure which was the final product. The materials employed were principally bones, hair, fish offal, and blood. The blood was being dried on the premises, but the drying was carried on to a comparatively small extent. The means of heating, however, were very crude, causing the blood to be burned to some extent and to give off very objectionable odours. Fish offal must of course be extremely offensive, and there was a pit of drainage water on the premises which was a great nuisance. In case any extensive development of the manufacture should take place there, I felt no doubt that a considerable nuisance would be created in the neighbourhood, and I could not therefore recommend that permission be given to carry on such a business as was suggested. Your permission was accordingly refused.

During the year I received complaints of the effluvia arising from some brass-casting works in Water Street. The day I visited fumes were escaping in large volumes, and driving directly into the windows of the complainant's premises, causing a great nuisance. Subsequently the Inspector of Nuisances saw the owner, who in consequence raised his chimney considerably, since when I have received no complaint.

v.—*Fortnightly Reports of the Medical Officer of Health to the Health Committee.*Fortnightly  
Reports of the  
Medical Officer  
of Health.

I have from time to time reported to your Committee on various questions, including the following:—

1. The general health of the City, as shown by the total Death-rate, Zymotic Death-rate, and Mortality from special diseases.

2. The occurrence of Infectious Disease, and the results of the investigations of certain of the most dangerous cases.
3. The Waters supplied by the Corporation, and from other sources.
4. Articles of Food, Drink, and Drugs, obtained for analysis, and the analysis of articles of a miscellaneous character.
5. Diseased and unwholesome food.
6. Reports on special questions in pursuance of resolutions, instructions, and otherwise.

*vi.—Prevention of Infectious Diseases.*

In all cases of Smallpox and Scarlet Fever efforts were made to obtain the removal of the patient to the hospital, unless there was good means of isolation at home. After the removal of the patient, or the termination of the illness, the rooms considered to be infected were fumigated with sulphur, stripped of wall paper, limewashed, and cleansed; 2,392 houses were thus disinfected during 1895. Infected bedding, clothing, etc., was sent to the Bacchus Road Station for disinfection. No children were allowed to attend school until a week in the case of Scarlet Fever, and a fortnight in the case of Smallpox, had elapsed since the disinfection of the house. In Smallpox cases members of the household were kept away from work till the necessary disinfection had been carried out.

Of the 100 cases of Smallpox reported last year, 98 were removed to the

CITY HOSPITAL,

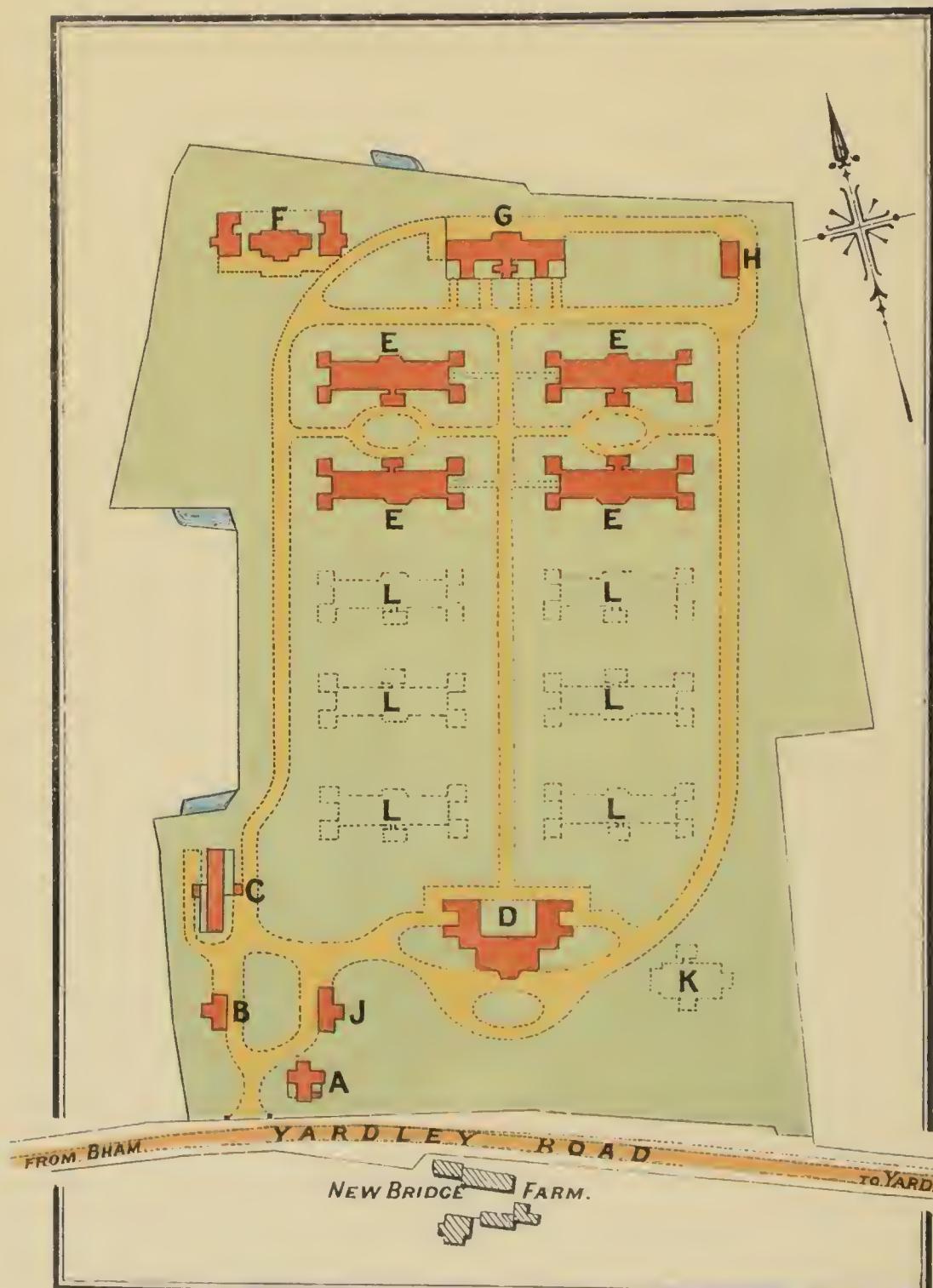
to which 2,595 cases of Scarlet Fever were also sent.

The cases removed to the Hospital in each year since its inauguration are shown below:—

Year.	Smallpox.	Scarlet Fever.	Total Cases.
1874	... 194	—	194
(2nd of November to the end of the year.)			
1875	... 420	20	440
1876	... 11	38	49
1877	... 38	43	81
1878	... 20	424	444
1879*	... 4	184	188
1880	... 16	170	186
1881	... 17	333	350
1882	... 105	627	732
1883	... 1090	638	1728
1884*	... 437	360	797
1885	... 81	204	285
1886	... 2	428	430
1887	... 10	438	448
1888	... 18	528	546
1889	... 0	1801	1801
1890*	... 0	2525	2525
1891	... 44	1225	1269
1892	... 24	1131	1155
1893	... 963	1339	2302
1894	... 2050	1539	3589
1895	... 98	2595	2693

\* 53 weeks.





A. Entrance Lodge	F. Servants' Quarters
B. Receiving Ward	G. Laundry
C. Isolation Pavilion	H. Mortuary
D. Administrative Block	J. Discharging Block
E. Pavilions	K. Nurses' Home
L. Sites for Additional Pavilions	

It is with much satisfaction that I record the completion during the year of a portion of the new Smallpox Hospital in Yardley Road, Little Bromwich. It is situated on a site containing about 24 acres, at a distance of over three miles from the centre of the City, though within its boundary, and in a thinly populated, in fact, quite a rural district, which in the case of a Smallpox Hospital is a great advantage.

The plan on the opposite page shows the buildings which have been erected, as well as the proposed positions of others which may be built at some future time. At present there are four pavilions, each accommodating 24 beds, and consisting of two wards 72 feet long by 30 feet wide. The amount of air space allowed per patient is over 2,000 cubic feet. Between the two wards of each pavilion are the entrance hall, pantry, linen and coal stores, and the nurses' room, which has a window on either side so as to command both the wards. Projecting from the corners of the wards are the bath rooms and water closets. The wards are heated by open down-draught stoves, and are amply ventilated. The dotted blocks marked L show the positions of the six additional pavilions to be erected as required.

The Receiving Ward consists of one room with a bath room attached to it, in which the patients can be examined, stripped of their clothing, which is immediately disinfected, and then sent into one of the pavilions for treatment, or, if any doubt exists as to the true nature of the case, into the Isolation Pavilion, which consists of a number of small wards, arranged to accommodate both males and females.

The Discharging Ward is a small building with the necessary dressing-rooms and bath-rooms, together with a clothes store where disinfected clothes are kept till required again for use.

In addition to the buildings already mentioned, there is an Administrative Block containing apartments for the Medical Officers, Matron, and Steward, together with the store-room, mess-room, recreation room, kitchen, etc.; a steam laundry with a disinfecting yard, containing a Washington Lyon's Steam Disinfecter and an Incinerator; also servants' quarters, and cottages for the outdoor officials. The Nurses' Home, marked K on the plan, has not yet been erected.

The number of Scarlet Fever cases requiring removal in the latter half of 1895 was so great that in July the old Smallpox Wards in Western Road had to be opened for the reception of some of them. Even then the accommodation soon became insufficient, and in October the new Hospital at Little Bromwich was brought into use, over 200 convalescent cases being provided for there.

#### The articles sent to the

#### DISINFECTING STATION.

in Bacchus Road numbered 33,302. They comprised 3,197 Disinfecting Station. beds, 1,026 mattresses, 2,096 counterpanes, 2,985 blankets, 2,490 sheets, 1,821 bolsters, 4,645 pillows, 732 carpets, 12,487 garments, and 1,823 miscellaneous articles.

**Unrecognised  
Smallpox.**

At the beginning of the year a case came to light that must have proved a serious danger to the district in which it occurred. From information received from a School Board Officer it was found that a boy living in Windsor Street had had an attack of Smallpox. No doctor had been called in, and he was said to have been treated for Measles and Chickenpox. There seems, however, to have been a strong suspicion, if nothing more, on the part of the lad's relatives as to the real nature of the case, for both his sister and his mother had been re-vaccinated at the time, and two rooms in the house had been stripped of wall paper. Moreover a friend of the family stated that she advised the mother to have the boy removed to the City Hospital, as she believed from her own experience that the disease was Smallpox. Dr. Richards examined the patient and found he had had a severe attack of the disease, which had left his face badly pitted. At first it was intended to prosecute the householder for concealing the illness, but this course was afterwards given up owing to the difficulty of proving that the real nature of the disease was known. The occupier of the house was, however, seen by your Chairman, and was severely reprimanded for his carelessness. The case was made much more serious by the fact that the premises were in the occupation of a dairyman and cowkeeper. The whole of the house, as well as the dairy and the cowsheds, underwent thorough disinfection, every possible means being taken to guard against the retention in them of the Smallpox virus.

**Prevention of  
Diphtheria and  
Typhoid Fever.**

In cases of Diphtheria, Croup, Typhoid Fever, and Puerperal Fever, a special examination was made of the houses infected, with a view of discovering any sanitary defects. Enquiry was also made as to the probability of the disease having been caught from any known case at school or in the neighbourhood. Children from houses invaded by Diphtheria or Croup were kept away from school, and in cases of Puerperal Fever I had an interview with the nurse or midwife respecting the precautions she would have to take to prevent the spread of infection.

**Typhoid Fever  
in Brunswick  
Road.**

I am strongly of opinion that the conservancy system of refuse disposal greatly facilitates the spread of Typhoid Fever. In my last annual report I pointed out that secondary cases of Typhoid Fever occurred at 1 out of 7 houses using ash-pit privies, 1 out of 14 where pans were in use, and 1 out of 22 where there were water-closets. During 1895 several instances came to my notice in which the privy accommodation appeared to cause the spread of infection. One of these was in Brunswick Road, where two cases occurred at a front house and three at the house in the rear. For the use of these houses there were two midden ash-pits, and within 15 feet of one of them was a well supplying the houses with drinking water. The water in the well was turbid and contained floating particles; there seems every probability that the soakage from the ash-pit found its way into it. I analysed a sample of the

water, which was of distinctly bad quality, as I expected. The Typhoid Fever in Brunswick well has since been closed, and the ashpit privies have been Road converted into water-closets. (continued).

Towards the end of 1894 and at the beginning of 1895 eleven cases of Typhoid Fever occurred in a court in Bellbarn Road. The disease was first introduced by a family who had been to Scarborough and had had two of their number ill there. From this family the disease spread to four other houses in the court, and I could discover nothing to account for this except the use of the pan privies in the yard. I strongly recommended the conversion of these privies to water-closets, but this recommendation was not acted upon.

In my last annual report I recorded that an outbreak of Typhoid Fever had occurred at Warstone Terrace, Warstone Lane, and that I had recommended the conversion of the pan privies into water-closets, but without effect. Last year attention was again called to the same terrace by the House Governor of the General Hospital, who had received into that institution several cases of Typhoid Fever which had occurred there. I again expressed the opinion that the continued existence of the disease was due to the system of privy accommodation, but I regret to say that no steps have been taken to enforce the reconstruction of the privies.

From what I have said it must be evident that the amount of preventive work devolving on the inspectorial staff has been enormously increased by the adoption of the Infectious Disease (Notification) Act. Up till 1890 the number of voluntarily notified cases was but small; since that date the number compulsorily reported has averaged 4,073 per annum. The amount of clerical work has also greatly increased. A record is kept of the condition of every house in which a case of infectious disease occurs, and circulars are sent to the schools attended in all cases of Smallpox, Scarlet Fever, Diphtheria, and Membranous Croup. The cases are also entered in a ledger kept for the purpose of verifying accounts sent in for notification fees, and finally are allotted to the wards they belong to and tabulated according to ages and localities, so as to show what parts of the town and what periods of life suffer the greatest incidence. These latter statistics have already proved of great interest, and will I think be found to be more and more valuable as the period over which they extend becomes longer.

#### MORTUARIES.

From returns supplied me by Mr. Farndale, Chief Mortuaries. Constable, I learn that 156 bodies were placed in these sanitary adjuncts during the year, 28 being taken to Moor Street, 19 to Ladywood Road, 45 to Kenyon Street, 37 to Duke Street, and 27 to Moseley Street.

## PUBLIC BATHS.

**Public Baths<sup>2</sup>**

Mr. Cox has supplied me with the following figures, showing the number of persons using the Corporation Baths in each of the last ten years.

			Men.	Women.	Total.
1886	...	...	320,303	18,712	339,015
1887	...	...	337,802	18,830	356,632
1888	...	...	284,173	16,669	300,842
1889	...	...	328,577	18,676	347,253
1890	...	...	327,936	18,816	346,752
1891	...	...	321,530	19,681	341,211
1892	...	...	311,527	20,367	331,894
1893	...	...	406,433	23,842	430,275
1894	...	...	307,536	21,065	328,601
1895	...	...	298,328	20,536	318,864

## SEWERAGE WORKS.

**Sewerage Works.**

I am informed by the City Surveyor that on March 31st, 1895, the sewers under the charge of the City Council measured 265 miles, and that the total length of

## STREETS AND ROADS

**Streets and Roads.**

was 260 miles; comprising  $254\frac{1}{4}$  miles of declared highways, and  $5\frac{3}{4}$  miles of undeclared highways, private roads, and passages.

## WATER SUPPLY.

**Water Supply.**

As usual I made an analysis every month of the water supplied by the Corporation. The average results given in Table X. show that the organic matter was higher than in previous years, and that a further increase has taken place in the hardness of the water. There was also an increase in the amount of chlorine.

**Analyses for Water Committee.**

For the Water Committee I examined 159 samples of water taken from the various streams and deep wells from which the Corporation Water Supply is obtained, and reported the results to the Committee.

**Well Water.**

I also analysed samples of water obtained from 1 deep well and 8 shallow wells; all the shallow wells were seriously polluted. During the year 8 wells were closed, some of which had been examined in 1894. One of these supplied Number 188 and the three next houses in Mary Street, Balsall Heath; in this case legal proceedings had to be taken. I gave evidence that I had analysed the water of this well on three different occasions, viz., on the 27th December, 1894, the 7th June, 1895, and the 4th July, 1895. The samples were pretty clear, but contained suspended particles floating in them. The results of analysis showed that the total solid matter was very large,

giving the water an excessive amount of hardness. Another feature of the water from this well was its variability of composition, as seen by a comparison of the results of analysis of the three samples examined. This variation referred more particularly to the ammonia, the nitrates, and the unchanged organic impurities. The larger amount of unchanged organic matter under the heading of organic ammonia, as well as the larger amount of free ammonia contained in the last sample examined, was no doubt the result of recent rains washing into the well the contents of two privy-middens, which I inspected together with the premises generally. The two middens in question were each situated 10 feet from the well, and I should expect under these circumstances that the well could not possibly remain unpolluted.

My attention was first called to this well in December, 1894, by a notification of a case of blood poisoning at 188, which the medical attendant attributed to the well water. The chemical analysis, supplemented by the medical opinion, led me to the conclusion that the water of this well was injurious to health, and unfit for domestic use, and that therefore the well should be closed.

The result of the hearing of the case was that the owner was ordered to close the well and to pay the costs of the proceedings, which amounted to £2.

#### MISCELLANEOUS ANALYSES.

During the year I analysed the following articles, which were sent to me from various Corporation Departments :—

Water or Sewage	...	...	48 samples.
Poudrette	...	...	8 ..
Chicory	...	...	7 ..
Cloth	...	...	7 ..
Coffee Berries	...	...	6 ..
Mortar	...	..	5 ..
Other Articles	...	...	20 ..

Reports upon the results of analysis were made to the different Committees concerned.

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D.,

*Medical Officer of Health.*



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### III. APPENDIX.

(TABLES, MAP, AND CHART).

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TABLE I.  
POPULATION, BIRTHS, AND DEATHS IN THE TEN YEARS 1886-1895.

YEAR.	Estimated Population.	Births.	Total Deaths.	DEATHS.		
				Of Infants under One Year old.	Of Children under Five Years old.	From Seven chief Zymotic Diseases.
1886	... 458,110	15,622	9,182	2,712	4,244	1,462
1887	... 462,251	15,315	9,225	2,670	4,137	1,424
1888	... 466,430	15,076	8,465	2,293	3,652	924
1889	... 470,646	15,357	9,035	2,579	4,096	1,270
1890	... 474,900	15,487*	10,329*	2,798*	4,504*	1,391*
1891	... 479,193	16,166	10,077	2,673	4,015	976
1892	... 483,526	16,026	9,642	2,664	4,234	1,244
1893	... 487,897	15,881	10,445	3,146	4,452	1,480
1894	... 492,301	15,505	8,946	2,539	3,980	1,196
1895	... 496,751	16,014	9,863	2,910	4,308	1,299
<i>Average of 9 years prior to 1895.</i>		475,028	15,604	9,483	2,675	4,146
						1,263
						1,428

\* 53 weeks.

1.—Population at Census 1891, 478,116.

3.—Average number of Persons in each House at Census 1891, 5·0.

2.—Number of Inhabited Houses at Census 1891, 95,516.

4.—Area of the City, in acres, 12,705.

TABLE II.  
BIRTH-RATES AND DEATH-RATES IN THE TEN YEARS 1886-1895.

YEAR.	Birth-rate per 1,000 persons living.	Death-rate per 1,000 persons living.	Death-rate in Infants under One Year per 1,000 Births.	Death-rate in Children under Five Years per 1,000 Children living.	Death-rate from Seven chief Zymotic Diseases.	Deaths in Public Institutions ; Percentage on total deaths.
1886	34.2	20.1	174	70	3.2	13.5
1887	33.2	20.0	174	69	3.1	13.6
1888	32.4	18.2	152	61	2.0	14.1
1889	32.7	19.2	168	69	2.7	14.6
1890	32.1	21.4	181	75	2.9	15.5
1891	33.8	21.1	165	69	2.0	16.4
1892	33.2	20.0	166	73	2.6	14.6
1893	32.6	21.5	198	77	3.0	15.6
1894	31.6	18.2	164	70	2.4	17.3
1895	32.3	19.9	182	76	2.6	16.8
Average of 9 Years } prior to 1895.	32.9	20.0	171	70	2.6	15.0

TABLE III.  
SHOWING THE NUMBER OF DEATHS IN THE NINE YEARS, 1886 TO 1894, FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES, AND THE NUMBER IN 1895.

	1886.	1887.	1888.	1889.	1890.*	1891.	1892.	1893.	1894.	1895.	Annual Average of 9 years, prior to 1895.
Smallpox	...	0	2	0	0	0	7	0	70	171	8
Measles	...	...	402	251	202	214	354	107	340	316	133
Scarlet Fever	...	42	37	40	162	218	95	68	68	75	133
Diphtheria	...	...	80	67	48	59	66	43	67	43	50
Whooping Cough	...	99	403	248	297	224	303	285	321	219	173
Typhus	...	0	0	0	0	0	0	0	0	0	0
Typhoid or Enteric	...	63	77	64	45	64	80	39	94	105	82
Continued	...	6	8	5	4	2	1	2	8	4	2
Diarrhoea	...	770	579	317	489	463	340	443	828	256	605
Total	...	1,462	1,424	924	1,270	1,391*	976	1,244	1,480	1,196	1,299
											1,263

\* 53 weeks.

TABLE IV.

Deaths from certain causes in the years 1891-1895.

DEATHS FROM	1891	1892	1893	1894	1895
Cancer ... ... ...	324	293	313	303	332
Phthisis ... ... ...	815	716	775	630	718
Other Tubercular Diseases ...	266	265	270	229	287
Premature Birth ... ...	295	345	359	346	376
Old Age ... ... ...	435	348	541	388	510
Bronchitis, Pneumonia, and Pleurisy ... ... ...	2,469	2,100	2,188	1,811	1,770
Diseases of Nervous System ...	902	864	915	861	931
Diseases of Heart ... ...	673	684	584	586	613
Diseases of Digestive System	570	597	712	582	772
Diseases of Urinary System	222	225	256	215	207
Accident or Negligence ...	356	292	296	280	329
Debility, Atrophy, Inanition, and Marasmus ... ...	593	592	750	615	658

**TABLE V.**  
**HEALTH DEPARTMENT.**

**SUMMARY OF NUISANCES ABATED AND OTHER WORK DONE DURING THE  
YEAR 1895.**

(RETURN MADE BY MR. PARKER, *Inspector of Nuisances.*)

No of Drains opened and cleared from obstruction	...	...	3,961
," Drains efficiently trapped	...	...	1,699
," Drains in cellars disconnected from the sewer or removed	...	...	107
," Drains removed from under Dwelling Houses	...	..	10
," Sink Drains disconnected from the sewer	...	...	160
," Sink Bend Pipes repaired or affixed	...	...	458
," Overflow Pipes from Water Cisterns disconnected	...	...	25
," Premises supplied with drains	...	...	200
," Houses disinfected, cleansed, and purified, after infectious disease	...	...	2,392
," Houses cleansed and whitewashed	...	...	1,427
," Houses repaired	...	...	1,621
," Houses supplied with wholesome water	...	...	7
," Houses rendered fit for human habitation or closed	...	...	63
," Houses provided with efficient ventilation	...	...	11
," Cases of overcrowding of houses remedied	...	...	20
," Accumulations of water in cellars removed	...	...	295
," Spouts repaired	...	...	344
," Soilpipes removed from inside dwelling houses	...	...	31
," Privies cleansed	...	...	477
," Ashpit Privies converted to water closets	...	...	1,122
," Pan Privies converted to water closets	...	...	248
," Additional Water Closets provided	...	...	473
," Ashpits and Privies repaired	...	...	1,703
," Urinals cleansed, repaired, or re-constructed	...	...	735
," Back Yards paved or repaired	...	...	449
," Premises from which fowls have been removed	...	...	241
," Nuisances from swine and swine styes abated	...	...	119
," Accumulations of wash, manure, etc., removed	...	...	796
," Premises reported to the City Surveyor's Department as dangerous, and rendered safe	...	...	1,066
," Defective Water Fittings reported to the Water Department, and repaired	...	...	925
Total			<u>21,185</u>

Number of Prosecutions	...	...	...	...	31
," Withdrawals	...	...	...	...	8
," Convictions	...	...	...	...	18
," Adjournments	...	...	...	...	5
Amount of Costs	...	...	...	...	£3 15s. 6d.
," Penalties	...	...	...	...	£1 0s. 0d.

**SMOKE NUISANCES.**

No. of Observations made by the Inspectors	...	...	...	4,526
," Manufacturers Reported for the emission of dense smoke	...	...	...	122
," " Cautioned	...	...	...	79
," " Summoned	...	...	...	43
," Prosecutions Withdrawn	...	...	...	3
Amount of Penalties	...	...	...	£18 10 0
," Costs	...	...	...	£20 7 0

## WORKSHOPS.

No. of Visits to Workshops	...	...	...	...	...	...	8,911
,, Sanitary Defects and Contraventions Remedied	...	...	...	...	...	...	1,146

## DAIRIES, COW SHEDS, AND MILKSHOPS.

No. of Visits to Cow Sheds	...	...	...	...	...	...	2,294
,, Visits to Dairies	...	...	...	...	...	...	185
,, Visits to Milk Shops and Milk Stores	...	...	...	...	...	...	4,185
,, Sanitary Defects and Contraventions Remedied	...	...	...	...	...	...	234

## BAKEHOUSES.

No. of Visits to Bakehouses	...	...	...	...	...	...	1,154
,, Sanitary Defects and Contraventions Remedied	...	...	...	...	...	...	130

## COMMON LODGING HOUSES.

No. of Registered Common Lodging Houses	...	...	...	...	...	...	78
,, Lodgers allowed	...	...	...	...	...	...	1,777
,, Houses Registered under the Public Health Act, 1875	...	...	...	...	...	...	80
,, Lodgers allowed	...	...	...	...	...	...	457
,, Visits by day	...	...	...	...	...	...	13,234
,, Visits by night	...	...	...	...	...	...	1,665
,, Lodgers found occupying the Houses	...	...	...	...	...	...	28,771
,, Persons Summoned	...	...	...	...	...	...	4

## THE CANAL BOATS ACTS, 1877 AND 1884.

No. of Canal Boats inspected	...	...	...	...	...	...	738
,, Canal Boats registered	...	...	...	...	...	...	35
,, Contraventions of Regulations Remedied	...	...	...	...	...	...	87
,, Persons Summoned	...	...	...	...	...	...	0

## SLAUGHTER HOUSES.

(Return made by MR. EDWARDS, Superintendent of the Markets.)

No. of Visits	...	...	...	...	...	...	...	9,586
Voluntary Surrenders of Meat	...	...	...	...	...	...	...	1,589
Seizures of Bad Meat	...	...	...	...	...	...	...	17
Weight Destroyed	...	...	...	...	...	...	...	181 tons
Voluntary Surrenders of Fish, &c.	...	...	...	...	...	...	...	587
Seizures of Fish, &c.	...	...	...	...	...	...	...	7

## CONTAGIOUS DISEASES (ANIMALS) ACT.

(Return made by MR. EDWARDS, Superintendent of the Markets.)

No. of Visits to Railway Stations	...	...	...	...	...	...	...	833
No. of Visits to Cow Houses	...	...	...	...	...	...	...	96

TABLE VI.

METEOROLOGICAL CONDITION OF THE AIR, TEMPERATURE OF THE GROUND,  
 HOURS OF SUNSHINE, AND AMOUNT OF RAINFALL FOR THE YEAR  
 ENDING DECEMBER 31ST, 1895.

Observed at the Birmingham and Midland Institute Observatory, Edgbaston, by  
 MR. ALFRED CRESSWELL.

	Pressure of Air.  Barometer	TEMPERATURE						Degree of Humidity. Complete Saturation = 100	Horizontal Movement of the air in miles.	Hours of Sun-shine.	RAINFALL			
		OF THE AIR.			OF THE GROUND.		1 foot deep.	4 feet deep.			Amount deposited in inches.	Number of Days on which Rain fell.		
		Mean Weekly Reading, reduced to 32° F. and sea level.	Highest in Shade.	Lowest in Shade.	Mean Tempe- rature in the Week.									
1895.														
January ...	29.675	42.8	13.9	30.6	35.8	43.7	—	10,204	25.3	3.92	21			
February ...	30.091	43.6	8.0	27.5	32.7	40.9	—	7,653	58.2	0.32	5			
March ...	29.679	58.1	24.0	40.4	38.8	40.7	89	9,948	75.2	1.91	17			
April ...	29.888	60.5	28.4	45.5	44.8	43.5	79	9,130	107.2	2.37	12			
May ...	30.113	77.6	36.0	53.9	52.1	47.1	70	8,387	201.3	0.82	5			
June ...	30.095	80.0	38.9	58.0	57.4	50.6	70	6,906	186.2	0.89	6			
July ...	29.863	75.5	46.2	58.5	57.6	52.8	75	8,958	128.5	3.25	18			
August ...	29.893	75.0	44.7	59.2	57.9	54.1	78	8,357	144.4	2.75	20			
September ...	30.155	81.8	40.4	59.9	57.2	55.1	80	6,278	194.7	0.45	6			
October ...	29.828	70.0	28.6	44.8	47.8	53.0	83	8,272	56.2	2.81	15			
November ...	29.846	59.4	33.5	44.6	45.0	49.1	90	10,996	37.8	3.41	23			
December ...	29.770	53.8	25.9	38.0	40.2	46.7	86	11,823	26.2	1.99	20			

PRICES OF COAL, FLOUR, POTATOES, AND BUTCHERS' MEAT,  
 AND THE NUMBER OF PAUPERS RELIEVED IN THE PARISH OF BIRMINGHAM  
 DURING EACH OF THE FIVE YEARS ENDED MICHAELMAS, 1891-1895.

Years.	Average Prices of Food and Fuel.				PAUPERISM.	
	Coal per ton.	Flour per 224lbs.	Potatoes per ton.	Butchers' Meat per lb.	Weekly Average of Paupers relieved during the Year.	
					In-door.	Out-door.
1895	8/6	14/-	70/-	Beef - 4/- Mut'n - 7/-	2,854	946
1894	9/-	14/-	60/-	Beef - 4 1/2 Mut'n - 6 3/4	2,716	893
1893	9/3	16/9	60/-	Beef - 4 1/2 Mut'n - 6 3/4	2,652	725
1892	9/2	22/3	75/-	Beef - 4 1/2 Mut'n - 7/-	2,627	834
1891	9/7	22/9	80/-	Beef - 4 1/2 Mut'n - 7 1/2	2,688	1,058

TABLE VII.

TEMPERATURE AND RAINFALL IN EACH MONTH AND YEAR FROM 1887 TO 1895.

MONTH.	TEMPERATURE.												RAINFALL.							
	1887	1888	1889	1890	1891	1892	1893	1894	1895	1887	1888	1889	1890	1891	1892	1893	1894	Average for eight years 1887-1894.	Average for eight years 1887-1894.	1895
JANUARY ...	35.2	37.2	36.3	41.1	34.4	35.2	35.1	36.7	36.5	30.6	1.19	0.50	0.59	2.80	1.92	1.98	1.75	1.61	1.53	3.92
FEBRUARY	38.3	34.8	36.5	36.8	40.2	37.3	39.2	39.9	37.9	27.5	0.62	0.11	1.66	0.52	0.69	1.41	2.56	2.05	1.20	0.32
MARCH ...	37.6	36.9	39.5	42.6	38.8	35.6	45.3	42.6	39.9	40.4	1.38	2.41	2.64	1.47	1.22	0.85	0.50	1.05	1.44	1.91
APRIL ...	41.6	42.1	43.7	44.0	42.4	44.9	49.6	48.5	44.6	45.5	1.47	1.89	2.91	0.69	2.13	1.23	0.33	1.62	1.53	2.37
MAY ...	47.6	51.1	54.3	52.7	48.4	53.2	54.5	47.1	51.1	53.9	1.88	0.83	4.00	2.12	3.38	1.85	2.08	2.01	2.27	0.82
JUNE ...	59.9	55.2	59.0	57.1	57.4	56.5	59.0	55.6	57.5	58.0	2.17	2.16	0.49	1.62	3.27	2.74	1.08	2.16	1.96	0.89
JULY ...	63.9	55.9	59.0	57.6	58.0	56.8	61.0	59.8	59.0	58.5	0.93	5.11	1.53	2.39	2.08	2.52	1.64	3.36	2.45	3.25
AUGUST ...	60.2	57.4	58.6	57.5	56.9	59.2	63.2	56.4	58.7	59.2	2.38	3.27	2.92	3.74	3.56	3.73	2.25	2.12	3.00	2.75
SEPTEMBER	52.5	53.7	55.1	58.6	57.2	54.0	54.8	52.1	54.7	59.9	2.31	1.20	2.17	1.26	1.63	2.97	1.72	1.70	1.87	0.45
OCTOBER ...	44.4	46.6	46.8	49.2	48.4	44.5	48.8	47.2	47.0	44.8	2.11	0.32	3.19	1.56	5.36	2.84	2.45	3.48	2.66	2.81
NOVEMBER	40.1	45.5	44.0	42.5	41.3	43.2	39.9	45.1	42.7	44.6	1.78	4.41	1.04	3.22	2.74	1.79	1.38	2.48	2.35	3.41
DECEMBER	37.3	40.3	37.9	29.8	39.2	34.7	39.5	40.1	37.3	38.0	1.58	2.41	1.80	0.71	3.16	1.69	3.02	1.88	2.03	1.99
YEAR ...	46.5	46.4	47.6	47.5	46.9	46.3	49.2	47.6	47.2	46.7	19.80	24.62	24.94	22.10	31.14	25.60	20.76	25.52	24.29	24.89

TABLE VIII.

NUMBER OF CASES REPORTED UNDER THE INFECTIOUS DISEASE  
(NOTIFICATION) ACT, 1889, DURING EACH WEEK OF THE YEAR 1895.

Number.	Week.		Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Group.	Typhus Fever	Typhoid Fever.	Simple Continued Fever.	Relapsing Fever.	Puerperal Fever.	Cholera.	Erysipelas.	Total.
		Date of ending.												
1895.														
1	January	5th .....	13	31	12	2	...	9	...	...	1	...	16	84
2	"	12th .....	18	31	13	2	...	9	1	...	1	...	19	94
3	"	19th .....	15	19	10	1	...	10	...	...	...	...	25	80
4	"	26th .....	6	19	17	3	...	14	...	...	1	...	19	79
5	February	2nd .....	5	22	11	1	...	13	...	...	...	...	21	73
6	"	9th .....	12	20	11	3	...	6	...	...	...	...	17	69
7	"	16th .....	6	32	12	6	...	7	...	...	...	...	27	90
8	"	23rd .....	2	48	4	3	...	9	...	...	...	...	24	90
9	March	2nd .....	4	39	7	...	...	9	...	...	...	...	20	79
10	"	9th .....	5	24	5	2	...	7	...	...	...	...	23	66
11	"	16th .....	7	38	5	4	...	9	...	...	...	...	19	82
12	"	23rd .....	1	23	11	4	...	4	...	...	...	...	12	55
13	"	30th .....	3	25	3	1	...	7	...	...	...	...	9	48
14	April	6th .....	1	26	15	1	...	11	...	...	2	...	20	76
15	"	13th .....	1	27	5	...	...	4	...	...	...	...	7	44
16	"	20th .....	...	28	5	2	...	4	...	...	2	...	14	55
17	"	27th .....	...	29	10	2	...	5	...	...	1	...	10	57
18	May	4th .....	...	21	7	3	...	2	...	...	...	...	13	46
19	"	11th .....	...	53	11	2	...	12	...	...	1	...	9	88
20	"	18th .....	...	48	13	..	...	9	...	...	...	...	13	83
21	"	25th .....	...	48	7	...	...	9	...	...	...	...	17	81
22	June	1st .....	...	35	8	1	...	7	...	...	...	...	9	60
23	"	8th .....	...	39	8	3	...	7	...	...	1	...	13	71
24	"	15th .....	...	39	9	...	...	4	...	...	...	...	16	68
25	"	22nd .....	...	45	12	1	...	4	...	...	...	...	7	69
26	"	29th .....	1	77	14	1	...	3	...	...	1	...	8	105
27	July	6th .....	...	56	13	1	...	3	...	...	...	...	8	81
28	"	13th .....	...	68	10	2	...	4	...	...	...	...	15	99
29	"	20th .....	...	74	18	3	...	3	...	...	...	...	11	109
30	"	27th .....	...	70	8	1	...	4	...	...	1	...	15	99
31	August	3rd .....	...	57	16	2	...	4	...	...	...	...	12	91
32	"	10th .....	...	79	6	2	...	7	1	...	...	...	15	110
33	"	17th .....	...	75	9	...	...	6	...	...	...	...	14	104
34	"	24th .....	...	88	7	2	...	8	...	...	...	...	12	117
35	"	31st .....	...	63	14	2	...	12	...	...	1	...	14	106
36	September	7th .....	...	63	14	2	...	12	...	...	1	...	8	100
37	"	14th .....	...	94	14	2	...	13	1	...	1	...	14	139
38	"	21st .....	...	108	15	1	...	10	...	...	...	...	16	150
39	"	28th .....	...	102	15	...	...	9	...	...	1	...	19	146
40	October	5th .....	...	103	18	2	...	19	...	...	2	...	15	159
41	"	12th .....	...	67	12	2	...	13	...	...	...	...	17	111
42	"	19th .....	...	86	15	...	...	6	...	...	1	...	16	124
43	"	26th .....	...	111	28	2	...	5	...	...	1	...	19	166
44	November	2nd .....	...	104	17	2	...	19	...	...	1	...	13	156
45	"	9th .....	...	79	18	4	...	14	...	...	1	...	23	139
46	"	16th .....	...	90	20	4	...	7	...	...	...	...	19	140
47	"	23rd .....	...	83	18	...	...	7	...	...	1	...	29	138
48	"	30th .....	...	90	16	2	...	15	...	...	...	...	22	145
49	December	7th .....	...	89	20	6	...	17	...	...	...	...	12	144
50	"	14th .....	...	60	18	2	...	9	...	...	1	...	21	111
51	"	21st .....	...	62	19	2	...	13	1	...	...	...	16	113
52	"	28th .....	...	57	17	5	...	3	...	...	...	...	16	98
	TOTALS		100	2964	640	101	...	436	4	...	24	...	818	5087

Cases of INFECTIOUS DISEASE NOTIFIED during the Year ending December 28th, 1895.

Classified according to ages, wards, and institutions.

DISEASES.	AGES.						WARDS.												Institutions.									
	0 to 1. <sup>st</sup>	1 to 2. <sup>nd</sup>	2 to 3. <sup>rd</sup>	3 to 4. <sup>th</sup>	4 to 5. <sup>th</sup>	5 to 6. <sup>th</sup>	6 to 15. <sup>th</sup>	15 to 25. <sup>th</sup>	25 to 45. <sup>th</sup>	45 to 65. <sup>th</sup>	65 and up.	Rottenham Park.	All Saints'.	St. Paul's.	St. George's.	St. Stephen's.	St. Thomas's.	St. Martin's.	Market Hall.	Bartholomew's.	St. Mary's.	Dedham.	Bordesley.	Needhills.	Bullock Heath.	Sailey.	City.	
S <small>MALLPOX</small>	..	..	8	18	31	37	6	..	14	14	4	12	12	4	..	7	1	1	..	4	6	6	3	4	1	3	4	100
S <small>CARLET FEVER</small>	..	38	937	1664	263	59	3	..	312	228	179	56	96	117	115	113	39	123	126	153	160	301	103	210	302	186	45	2964
D <small>IPHTHERIA</small>	..	9	182	249	102	86	12	..	61	151	51	31	24	24	23	21	9	19	18	47	14	21	21	29	27	39	10	640
M <small>EMBRANOUS GROUP</small>	6	70	24	1	..	..	..	14	13	7	10	3	4	3	6	1	1	1	2	3	5	3	6	6	12	1	1	101
T <small>YPHUS FEVER</small>	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
T <small>YPOHOID FEVER</small>	..	37	147	130	96	23	3	38	28	30	25	14	16	7	24	12	25	34	10	42	17	19	25	35	30	5	436	
S <small>IMPLE CONTINUED FEVER</small>	..	..	1	1	..	1	1	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	
R <small>ELAPSING FEVER</small>	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
P <small>UERPERAL FEVER</small>	..	..	..	..	..	9	15	..	..	2	2	1	..	..	..	..	2	1	..	..	1	2	4	1	1	2	4	1
C <small>HOLERA</small>	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
E <small>RYSIPELAS</small>	..	38	49	109	119	255	190	58	80	50	47	31	29	40	29	72	14	50	41	31	45	72	32	44	48	43	20	818
<b>Totals</b>	91	1284	2212	555	549	235	61	523	486	319	165	178	207	178	244	76	219	221	249	274	423	182	320	423	315	85	5087	

TABLE X.—WATER: RESULTS OF ANALYSES

Date of Receipt of Samples.	DESCRIPTION.	Temp. C.	Total Solid Impurity	Organic Carbon.	Organic Nitrogen.
1895.	CORPORATION SUPPLY.				
Jan. 9th	8 Court, Rea Street .....	2·8	28·7	·250	·050
Feb. 12th	Rear of 196, Warstone Lane .....	2·8	35·0	·270	·045
Mar. 18th	Gem Terrace, Icknield Port Road ...	6·1	32·8	·275	·055
April 10th	3 Court, Northumberland Street ...	7·8	26·5	·200	·035
May 8th	Rear of 15 and 16, St. Mary's Row	13·9	32·3	·355	·090
June 13th	1 Court, York Street, Harborne.....	15·5	32·4	·130	·040
July 3rd	3 Court, Bromsgrove Street .. ....	17·8	33·0	·240	·035
Aug. 12th	Bradgate Place, Vincent Street .....	15·0	32·8	·155	·030
Sept. 3rd	Rear of 45 and 47, Foundry Road...	16·7	31·6	·200	·075
Oct. 8th	4 Court, Smith Street, Bloomsbury	10·0	27·9	·210	·050
Nov. 6th	4 Court, Cregoe Street..... ....	8·3	38·1	·110	·045
Dec. 11th	46 Court, Grosvenor Street West ...	7·2	31·8	·230	·040
	Average Results ... 1895...	10·3	31·9	·219	·049
	„ „ ... 1894...	10·9	30·3	·174	·046
	„ „ ... 1893...	10·6	30·1	·186	·037
	„ „ ... 1892...	10·1	28·1	·185	·028
	„ „ ... 1891...	10·2	29·3	·195	·028
	WELL WATER.				
Jan. 7th	Four Dwellings, Ward End .....	...	144·0	...	...
Feb. 25th	Grand Hotel, Colmore Row ... ....	...	17·0	...	...
Mar. 14th	*117, 119, and 121, Brunswick Road	...	125·0	...	...
„ 22nd	†135, 136, 137, and 138, Edwardes Street .....	...	150·0	...	...
April 10th	2, May Cottages, Ward End .....	...	178·0	...	...
„ 10th	Back 63, Belgrave Street .. ....	...	175·0	...	...
Dec. 3rd	137 and 139, High Street, Harborne	...	90·0	...	...
„ 3rd	116, High Street, Harborne .. ....	...	108·0	...	...
„ 5th	“ Cross Farm,” Metchley Lane .....	...	69·0	...	...

• Typhoid Fever.

† Diphtheria.

EXPRESSED IN PARTS PER 100,000.

ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contami- nation. (Estimated.)	Chlorine.	Hardness.			REMARKS
					Tempo- rary.	Perma- nent.	Total.	
·001	·130	·181	990	1·8	7·7	11·6	19·3	Very slightly turbid; yellowish green
·001	·310	·356	2,790	2·1	13·7	14·4	28·1	Very slightly turbid; green
·001	·180	·236	1,490	1·8	8·5	16·6	25·1	Very slightly turbid; greyish green.
none	·170	·205	1,380	1·7	6·7	12·7	19·4	Slightly turbid; greyish green
none	·260	·350	2,280	3·0	6·3	13·8	20·1	Very turbid; greenish grey
none	·190	·230	1,580	2·2	13·4	12·6	26·0	Clear; pale green
·001	·100	·136	690	2·0	11·4	15·8	27·2	Clear; pale green
·001	·250	·280	2,190	3·1	10·7	11·2	21·9	Clear; pale green
none	·180	·255	1,480	2·2	8·0	12·6	20·6	Clear; pale green
none	·100	·150	680	1·9	7·6	13·6	21·2	Clear; green
·001	·440	·486	4,090	3·3	9·9	14·0	23·9	Very slightly turbid; pale green
none	·330	·370	2,980	2·2	6·4	15·7	22·1	Clear; green
none	·220	·270	1,890	2·3	9·2	13·7	22·9	
none	·214	·251	1,820	2·2	7·0	13·1	20·1	
·001	·267	·304	2,350	2·1	7·5	13·2	20·7	
·001	·263	·291	2,320	1·9	8·0	12·2	20·2	
·001	·214	·243	1,820	2·0	6·2	14·4	20·6	
·001	5·7	...	57,400	14·2	...	...	...	Clear; pale green
·001	trace	...	...	1·0	...	...	...	Opalescent
none	4·4	...	43,700	5·5	...	...	...	Very slightly turbid
none	3·3	...	32,700	10·6	...	...	...	Bright; with suspended particles
·001	7·1	...	71,200	16·3	...	...	...	Almost clear; fine floating particles
none	6·6	...	65,700	10·0	...	...	...	Almost clear; fine floating particles
·007	4·2	...	42,000	14·1	...	...	...	Very slightly turbid
·003	7·0	...	70,000	10·8	...	...	...	Very slightly turbid
·001	2·7	...	27,000	5·1	...	...	...	Clear; with minute fibrous particles

TABLE XI.  
RETURN FOR THE PERIOD 1ST JULY, 1894, TO 30TH JUNE, 1895, RESPECTING THE VACCINATION OF CHILDREN WHOSE  
BIRTHS WERE REGISTERED IN THE CITY DURING THE SAID PERIOD.

Number of Births returned in the "Birth List Sheets" as Registered.	Number of these Births duly entered in Columns 10, 11, and 13 of the "Vaccination Register" (Birth List Sheets), viz. :			Number of these Births which remained unentered in the "Vaccination Register" on account (as shown by Report Book) of			Number of these Births remaining neither duly entered in the "Vaccination Register" (cols. 3, 4, 5, and 6 of this Return) nor temporarily accounted for in the "Report Book" (cols. 8, 9, and 10 of this Return).
	Col. 10.	Col. 11.	Col. 13.	Postponement by Medical Certificate.	Removal to Districts the Vaccination Officer of which has been duly apprised.	Removal to places unknown or which cannot be reached; and cases not having been found.	
							66
Birmingham Parish ...	7,954	51	1	990	86	67	10
Aston Union (within the City) ... ...	6,203	4,278	54	—	783	102	33
King's Norton Union (within the City) ...	1,692	1,174	16	—	159	29	21
Total ... ...	15,849	11,621	121	1	1,932	217	121
							1,230
							606
							94
							308
							204

Table of the Number of Deaths occurring in each Street in the City of Birmingham during the Year 1895.

STREETS.	Zymotic Diseases.	Other Diseases.	STREETS.	Zymotic Diseases.	Other Diseases.	STREETS.	Zymotic Diseases.	Other Diseases.
A			Banbury Street ..	1	2	Bridge Road ..	1	1
A B Row ..			Banks Road ..	1		Bridge St et ..	1	1
Abberley Street ..	1		Barford Road ..	3	3	Bridge Street West ..	9	36
Abbey Street, All Saints' ..	2	7	Barford Street ..	7	34	Brighton Road ..	1	6
Abbey Street, Harborne ..			Barker Street ..		7	Bristol Road ..	1	12
Abcrdeen Street ..	5	16	Barlow's Road ..			Bristol Street ..	1	11
Ada Street ..			Barn Street ..	4	8	Broad Street ..	2	14
Adams Street ..	4	27	Barnsley Road ..			Bromford Lane ..		
Adderley Road ..	5	13	Barr Street ..	2	19	Bromsgrove Street ..	2	14
Adderley Street ..			Barrack Street ..	1		Brook Road ..		
Addison Road ..			Bartholomew Row ..	2	6	Brookfield Road ..	1	6
Adelaide Street ..		11	Bartholomew Street ..	1	11	Broom Street ..		5
Albany Road ..			Barwell Road ..		3	Browning Street ..	3	12
Albert Road ..			Barwick Street ..		1	Brneton Street ..		
Albert Street ..		1	Baskerville Passage ..			Brunswick Road ..	3	15
Albion Street ..		6	Baskerville Place ..			Buck Street ..	1	5
Alcester Street ..	2	16	Bath Passage ..		3	Buckingham Street ..	3	11
Alder Drive ..			Bath Row ..		7	Bull Ring ..		
Alder Road ..			Bath Street ..	1	6	Bull Street, Harborne ..		5
Alexandra Road ..			Beach Street ..	3	9	Bull Street, Market Hall ..	3	
Alexandra Street ..	3	2	Beak Street ..		3	Bullock Street ..		4
Alfred St., Balsall Heath ..	1	7	Beaufort Road ..		4	Burbury Street ..	2	14
Alfred Street, St. Paul's ..	2	1	Bedford Road ..		5	Burlington Passage ..		
Algernon Road ..			Beech Lanes ..			Burney Lane ..		
Allecock Street ..	1	8	Beechfield Road ..		5	Butler Street ..		3
Allen's Road ..		1	Belcher Lane ..		2	Butler Street South ..		1
Allesley Street ..		2	Belgrave Road ..	1	4	Butlin Street ..		2
Allison Street ..		2	Belgrave Street ..	1	16	Byron Road ..		4
Allport Street ..			Bell Street ..			C		
All Saints' Road ..		2	Bell Barn Road ..		5	Calthorpe Road ..		
All Saints' Street ..			Bellefield Road ..		34	Cambridge Crescent ..		1
Alma Crescent ..	1	3	Bellis Street ..		7	Cambridge Street ..		
Alma Street ..			Belmont Passage ..		2	Camden Drive ..	1	1
Alston Street ..	3	11	Belmont Row ..	1	7	Camden Grove ..		
Alum Rock Road ..	1	19	Benacre Street ..	4	20	Camden Street ..	7	43
Ampton Road ..			Bennett's Hill ..			Camp Hill ..		9
Anderton Road ..	1	8	Benson Road ..		6	Camp Street ..		5
Anderton Street ..	1	14	Berkley Street ..		3	Canal Street ..	3	1
Andover Street ..			Berners Street ..	1	2	Cannon Street ..		
Angelina Street ..	3	25	Berry Street ..	1	1	Cannon Hill Road ..		
Anthony Road ..	1	1	Bertram Road ..			Cape Lane ..		
Arden Road ..	1	7	Betholom Row ..			Cape Street ..		2
Argyle Street ..	4	8	Birchall Street ..	1	4	Cardigan Street ..	4	13
Armoury Road ..			Birchwood Road ..		4	Carlisle Street ..	1	3
Arsenal Street ..			Bird Lane ..		1	Carlton Road ..		7
Arthur Road, Edgbaston ..			Bishop Street ..	3	12	Carlyle Road ..		2
Arthur Road, Saltley ..	2	5	Bishop Street South ..			Carnarvon Road ..		
Arthur Street ..	2	31	Bissell Street ..	4	12	Caroline Street ..	1	4
Artillery Street ..	2	6	Black Pit Lane ..	6		Carpenter Road ..		3
Ashford Street ..			Blake Lane ..		2	Carrington Road ..	1	7
Ashley Street ..	5	16	Blakeland Street ..		7	Carr's Lane ..		
Ashited Row ..	4	17	Blew Street ..	4	7	Cartland Road ..		3
Aston Road ..	3	16	Blew Street West ..		9	Carver Street ..		15
Aston Street ..		3	Bloomsbury Street ..	2	19	Castle Street ..		1
Aston Brook Street ..		12	Blucher Street ..		11	Cathcart Street ..		7
Aston Church Road ..			Blythe Street ..	2	15	Cato Street ..	4	14
Asylum Road ..	2	6	Bolton Road ..	4	37	Cato Street North ..	2	4
Athole Street ..		1	Bolton Street ..			Cattell Road ..	1	17
Atlas Road ..			Bond Street ..			Cattell Grove ..		6
Auckland Road ..	1	12	Bordesley Green ..	1	9	Caveudish Road ..		2
Augnsta Street ..			Bordesley Green Road ..	2	2	Cecil Street ..		1
Augustus Road ..		2	Bordesley Park Road ..	2	16	Chad Road ..		18
Austin Street ..		3	Bordesley Street ..	4	13	Chandos Road ..		2
Avenue Road ..		1	Bow Street ..	2	8	Chapel Street ..		3
B			Bowyer Street ..		4	Chapel House Street ..		
Baechus Road ..	1	11	Bracebridge Street ..	3	26	Chapman Road ..		5
Bagot Street ..	2	12	Bradford Street ..	2	23	Charles Road ..		7
Bailey Street ..		1	Braithwaite Road ..		1	Charles Arthur Street ..	1	13
Baker Street ..		5	Branston Street ..	1	10	Charles Henry Street ..	7	28
Balsall Heath Road ..	1	25	Brass Street ..		3	Charlotte Road ..		3
			Brasshouse Passage ..		1	Charlotte Street ..		3
			Bread Street ..		2	Chattaway Street ..		3
			Brearley Street ..	8	55			
			Brewery Street ..	1	4			
			Brieklin Street ..					

STREETS.			STREETS.			STREETS.		
	Zymotic Diseases.	Other Diseases.		Zymotic Diseases.	Other Diseases.		Zymotic Diseases.	Other Diseases.
Cheapside ..	2	43	D			Farm Road ..		
Cheatham Street ..		4	Daisy Road ..	3		Farm Street ..	9	53
Chequers Walk ..	1	2	Dale End ..	6		Farquhar Road ..		1
Cherry Street ..			Dalton Street ..	2		Farquhar Road East ..		
Cherry Wood Road ..	2	9	Darnley Road ..	1		Fazley Street ..		6
Chester Street ..	3	14	Dart Street ..	1		Fellows Lane ..		
Chesterton Road ..	2	12	Dartmouth Street ..	13		Fisher Street ..	1	8
Cheston Road ..			Darwin Street ..	2		Fleet Street ..		
Chicheley Street ..	1	1	Dawson Street ..	1		Floodgate Street ..	1	5
Chiswell Road ..		3	Dean Street ..	2		Florence Street ..	2	5
Christ Chnrech Passage ..			Dearman Road ..	1		Ford Street ..	7	15
Church Lane ..			Defford Road ..	1		Fordrough Lane ..		
Church Road, Edgbaston ..	1		Denbigh Street ..	1	3	Fordrough Street ..		
Church Road, Harborne ..			Derby Street ..	3	7	Forge Street ..		
Church Road, Neehells ..	2		Devon Street ..	4	20	Forster Street ..		2
Church Road, Saitley ..	7		Devonshire Street ..	5	17	Foundry Road ..		2
Church Street ..	2		Dighbeth ..		9	Fowler Street ..		
City Road ..	4		Digby Street ..		4	Fox Street ..		2
Claremont Road ..			Dixon Road ..		6	Francis Road ..		6
Clarence Road ..	3		Doe Street ..	1	4	Francis Street ..	5	25
Clarendon Road ..	3		Dolman Street ..	2	23	Frank Street ..	1	2
Clark Street ..	2	16	Dolobran Road ..	1	3	Frankfort Street ..	2	11
Claverdon Street ..		2	Don Street ..	2	6	Franklin Street ..		2
Claybrook Street ..	1		Dora Road ..			Frederick Road ..		3
Clayton Road ..	4		Dorset Road ..			Frederick Street ..		5
Clement Street ..	2		Dover Street ..			Freeman Road ..	2	5
Cleve Terrace ..	1	1	Dr. Johnson Passage ..			Freeman Street ..		
Cleveton Road ..	1	11	Drayton Road ..			Freeth Street ..	5	9
Clifton Road ..	3	23	Drury Lane ..	1	1	Friar Street ..	1	7
Clissold Street ..	2	4	Dryden Road ..			Fulham Road ..		
Clive Passage ..			Duchess Road ..		2	G		
Cliveland Street ..	4		Duddeston Row ..			Galton Street ..	2	5
Clyde Street ..	3		Duddeston Mill Road ..	2	13	Garbett Street ..	2	14
Coleman Street ..	2	8	Dudley Road ..	4	17	Garrison Lane ..	3	26
Coleshill Street ..	3	14	Dindley Street ..		1	Garrison Street ..	3	20
College Road ..			Dugdale Street ..	1	13	Gas Street ..		1
College Street ..	1	4	Duke Street ..	10		Gate Street ..		2
Colmore Row ..		2	Dymoke Street ..	2	13	Gench Street ..	1	6
Colville Road ..	3	8	E			Gee Street ..	1	7
Commercial Street ..	1		Earl Street ..			Gem Street ..		3
Common Lane ..			Eastern Road ..			George Road ..	1	3
Communication Row ..	1	2	Easy Row ..	2		George St., Balsall H'th ..		7
Congreve Street ..			Eden Place ..			George Street, St. Paul's ..		2
Constance Road ..			Edgbaston Road ..			George Street West ..	4	19
Constitution Hill ..	6		Edgbaston Park Road ..			Gibb Street ..	1	
Conybere Street ..	4	19	Edgbaston Street ..	1		Gillhurst Lane ..		
Cook Street ..	7		Edmond Road ..	4		Gillott Road ..		10
Cooksey Road ..	3	20	Edmund Street ..	3		Gladstone Road ..	1	3
Cope Street ..	2	5	Edward Road ..			Glebe Street ..	1	2
Coplow Street ..	2	11	Edward Street ..	2	15	Gloucester Street ..		1
Cornalio Street ..	7		Edwardeas Street ..	3	19	Glover Road ..		4
Cornwall Street ..			Eldon Road ..			Glover Street ..	3	14
Corporation Street ..	3		Elkington Street ..		2	Godwin Street ..		4
Cotterill's Lane ..	1		Ellen Street ..	2	18	Golden Hillock Road ..		13
Couchman Road ..	1		Ellis Street ..		1	Gooch Street ..	5	16
Court Road ..			Elvetham Road ..	1	1	Goode Street ..		6
Court Oak Road ..			Emily Street ..	2	13	Goodman Street ..		
Coventry Road ..	4	34	Emmeline Street ..		1	Goodrick Street ..		
Coventry Street ..	1	12	Enfield Road ..			Gopsall Street ..	1	7
Cowper Street ..	1	16	Erasmus Road ..		6	Gordon Road ..		
Cox Street ..	2	6	Ernest Street ..			Gordon Street ..		
Cox Street West ..		3	Eiskine Street ..	1	4	Gosta Green ..		
Coxwell Road ..	1	4	Essex Street ..	7		Gough Road ..	1	2
Crabtree Road ..	1	4	Essington Street ..	5		Gough Street ..		5
Cranemore Lane ..			Ethel Road ..			Grace Road ..		9
Cranemore Street ..	2		Ethel Street ..			Grafton Road ..		2
Cregoe Street ..	2	12	Eva Road ..	8		Graham Street ..		3
Crescent ..	11		Eversley Road ..	1	8	Grange Rd., Bordesley ..	1	15
Crompton Road ..	5		Exeter Street ..			Grange Rd., Harborne ..		1
Cromwell Passage ..			Eyre Street ..	2		Grattt Street ..		4
Cromwell Street ..	12	28	F			Grantham Road ..		1
Crooked Lane ..			Factory Road ..	1	1	Grinnville Street ..	3	9
Cnekoo Road ..	13		Fulconer Road ..	1		Gray Street ..	2	3
Cumberland Street ..	1					Gray's Road ..	2	3
Curzon Street ..	2	7				Great Barr Street ..	2	17
Cuthbert Road ..		7				Great Brook Street ..	4	23
Cyril Road ..	5					Great Charles Street ..	2	

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
Great Colmore Street ..	2	26	Hill Street ..	1	3	Kyrwick's Lane ..		13
Great Francis Street ..	6	36	Hinckley Street ..			Ladypool Road ..	1	22
Great Hampton Row ..	2	16	Hingeston Street ..	9	24	Ladywell Passage ..		
Great Hampton Street ..	1	10	Hobmoor Road ..		1	Ladywell Walk ..		2
Great King Street ..	8	27	Hockley Hill ..		8	Ladywood Road ..	4	13
Great Lister Street ..	6	24	Hockley Street ..		8	Lancaster Street ..	1	13
Great Russell Street ..	8	28	Holborn Hill ..		10	Landor Street ..		10
Great Tindal Street ..	1	7	Holland Street ..		1	Langley Road ..		4
Green Lane ..	2	19	Holliday Street ..		4	Lansdowne Street ..	1	6
Green St., Deritend ..	1	3	Hollier Street ..		8	Larches Street ..	1	12
Green Street, Saltley ..			Holloway Head ..		2	Latimer Street ..	6	26
Greenfield Crescent ..		2	Holly Road ..		1	Lawden Road ..	2	6
Greenfield Road ..	2	11	Holt Street ..		4	Lawley Street ..	4	13
Greenway Street ..	1	21	Homer Street ..		1	Lawrence Street ..		7
Grosvenor Road ..		1	Hooper Street ..		1	Leach Street ..		1
Grosvenor Row ..			Hope Street ..		3	Leamington Road ..	1	7
Grosvenor Street ..			Horse Fair ..		2	Lease Lane ..	1	2
Grosvenor Street West ..	5	17	Hospital Street ..		12	Ledsam Street ..	2	9
Grove Lane ..			Howard Street ..		1	Lee Bank Road ..	4	22
Grove Street ..			Howe Street ..		5	Lee Crescent ..		2
Guest Street ..	2	4	Hubert Street ..		3	Lee Mount ..		1
Guildford Street ..	1	13	Hugh Road ..		1	Leek Street ..		2
Guthrie Street ..			Humpage Road ..		6	Lees Street ..		7
<b>H</b>								
Haden Street ..		1	Hunter's Road ..			Legge Lane ..		1
Hadley Street ..		5	Hunter's Vale ..		1	Legge Street ..	1	6
Hagley Road ..	1	10	Hurst Street ..		8	Leigh Road ..	1	
Halberton Street ..	3	6	Hutton Road ..			Lenah Street ..		2
Hall Road ..			Hutton Street ..		5	Lennox Street ..	1	17
Hall Street ..	1	2	Hyde Road ..		1	Leonard Street ..	2	
Hampden Street ..		1	Hylton Street ..			Leopold Street ..	2	10
Hampton Street ..	2	8	I			Leslie Road ..		
Handsworth New Road ..		1	Ieknield Square ..		14	Lilly Green ..		
Hanley Street ..		8	Ieknield Street ..		4	Lime Grove ..		2
Hanover Street ..		1	Ieknield Port Road ..		7	Lingard Street ..	4	13
Harborne Lane ..		1	Inge Street ..		3	Link Road ..		2
Harborne Road ..			Ingleby Street ..		9	Lionel Street ..	1	3
Harding Street ..	3	3	Inkerman Street ..		2	Lister Street ..		6
Harford Street ..		3	Irving Street ..		12	Little Ann Street ..	1	5
Harold Road ..		2	Islington Row ..		35	Little Barr Street ..	2	5
Harrison's Road ..			Ivy Lane ..		2	Little Bow Street ..		1
Hart's Road ..		3	J			Little Broom Street ..		
Hatchett Street ..	1	17	Jakeman's Road ..			Little Edward Street ..	1	3
Havelock Road ..		8	Jakeman's Walk ..		3	Little Francis Street ..		
Hawkes Street ..	2	10	Jamaica Row ..		1	Little Green Lane ..	2	15
Hawthorn Road ..			James Street ..		5	Little King Street ..	1	6
Heath St., All Saints ..	9	26	James Turner Street ..		2	Little Shadwell Street ..		2
Heath St., Balsall H'th ..	1	12	James Watt Street ..		1	Liverpool Street ..	1	6
Heath Street South ..	1	2	Jenkins Street ..		3	Livery Street ..		3
Heath Green Road ..		1	Jennens Row ..		2	Lloyd Street ..	1	
Heath Mill Lane ..		16	John Bright Street ..			Lodge Rd., All Saints ..	5	27
Heaton Street ..	8	16	John's Road ..		1	Lodge Road, Harborne ..		8
Helena Street ..			Johnson Street ..		1	Lombard Street ..		7
Hencage Street ..	10	35	Johnson Street ..		3	Long Aere ..	6	28
Henley Street ..		12	Johnstone Street ..		1	Long Street ..	2	10
Henn's Walk ..			K			Longbridge Road ..		3
Henrietta Street ..	1	1	Keeley Street ..		4	Longmore Street ..	1	15
Henry St., Balsall H'h ..			Kelyngue Street ..		2	Lonsdale Road ..		
Henry St., Duddeston ..	2	16	Kendall Road ..		13	Lord Street ..		2
Henshaw Road ..		5	Kent Street ..		16	Lordswood Road ..	4	4
Herbert Road ..		2	Kent Street North ..		2	Louisa Street ..		
Hermitage Road ..			Kenyon Street ..		6	Love Lane ..		
Hertford Street ..		4	Key Hill ..		2	Loveday Street ..	1	3
Hick Square ..			King St., Balsall Heath ..		8	Lowe Street ..		2
Hick Street ..	3	13	King Street, Bordesley ..		1	Lower Dartmouth Street ..	1	4
Hickman Road ..		1	King Alfred's Place ..		1	Lower Darwin Street ..		1
High Street ..		4	King Edward's Place ..		1	Lower Edwardes Street ..	1	3
High Street, Bordesley ..			King Edward's Road ..		18	Lower Essex Street ..	5	13
High Street, Deritend ..	3	27	King Edward's Road ..		2	Lower Fazeley Street ..		7
High St., Harborne ..	6	14	Kingsley Road ..		5	Lower Hurst Street ..		10
High St., Saltley ..	1	2	Kingsley Road ..		2	Lower Ilhurst Street East ..		1
Highfield Rd., Edgb'n ..			Kingsgate Road ..		6	Lower Loveday Street ..		1
Highfield Rd., H'borne ..		2	Kingsgate Road ..		1	Lower Priory ..		
Highfield Rd., Saltley ..		5	Kingsgate Road ..		2	Lower Temple Street ..	1	
Highgate Place ..		3	Kingsgate Road ..		1	Lower Tower Street ..	2	22
Highgate Road ..	5	13	Kingsgate Road ..		1	Lower Trinity Street ..		3
Highgate Square ..			Kingsgate Road ..		1	Loxton Street ..	1	2
Highgate Street ..	4	23	Knutsford Street ..		5	Ludgate Hill ..	1	3
High Park Street ..		3	Kyott's Lake Road ..		3			

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
Ludgate Hill Passage ..			Needless Alley ..			Paxton Road ..		5
Lupin Street ..	5	22	Nelson Street ..	3	16	Pebble Mill Road ..		
Lyttelton Road ..			New Street ..		5	Peel Street ..	1	4
M			New Bartholomew St ..		3	Pembroke Road ..		2
Maedonald Street ..	4	7	New Bond Street ..	1		Penn Street, Deritend ..	1	3
Main Street ..	1	7	New Brunswick Road ..	3	1	Penn Street, Duddesdon ..	1	4
Malthouse Lane ..	1	4	New Canal Street ..	3	1	Perrot Street ..	1	11
Malvern Street ..	1	5	New degate Street ..	1	3	Pershore Road ..	7	11
Malvern Hill Road ..		1	Newhall Hill ..	1	6	Pershore Street ..		
Manchester Street ..		3	Newhall Street ..		15	Phillip Street ..		
Mauer Road ..			New Clifton Road ..		2	Pickford Street ..		5
Margaret Road ..			New John Street ..		23	Piddock Street ..		3
Margaret Street ..			New John Street West ..	12	53	Pigott Street ..		3
Mark Lane ..			New Market Street ..		1	Pinfold Street ..		
Market Street ..	1	2	New Meeting Street ..		1	Pitney Street ..		
Marroway Street ..		8	Newport Road ..		2	Pitsford Street ..		3
Marshall Street ..		9	New Sprinz Street ..	6	20	Pitt Street ..		
Marshall Street South ..		5	New Summer Street ..	4	16	Plough & Harrow Road ..		
Martineau Street ..			Newton Road ..			Plumme Street ..		
Mary St., Balsall Heath ..	2	22	Newton Street ..		2	Pope Street ..	3	16
Mary Street, St. Paul's ..	1		Newtown Row ..	6	25	Poplars Avenue ..		
Mary Ann Street ..	1		Nile Street ..		2	Poplar Road ..		
Masshouse Lane ..			Nineveh Road ..			Porchester Street ..		1
Maxstoke Street ..			Noel Road ..		2	Porthope Road ..	1	3
Meadow Road ..			Norfolk Road ..			Portland Road ..		2
Medlicott Road ..	1		Norman Street ..	2	7	Potter Street ..	1	3
Melville Road ..			Northampton Street ..		2	Powell Street ..		3
Meriden Street ..	1	7	North Road ..	1	8	Prescott Street ..	4	18
Metchloy Lane ..	1	9	Northbrook Street ..		3	Price Street ..	1	5
Motchley Park Road ..			Northfield Road ..		5	Priestley Road ..		6
Metropolitan Road ..			Northumberland Street ..		10	Prince Albert Street ..	1	4
Midland Street ..		11	North Warwick Street ..			Princes Row ..		2
Miles Street ..	1	14	Northwood Street ..		10	Princes Street ..		2
Milk Street ..	1	3	Norton St., All Saints ..	1	4	Princess Road ..		4
Mill Lane, Harborne ..	1	3	Norton St., Balsall Heath ..		8	Princess Street ..		1
Mill Lane, St. Martin's ..		3	Norwood Road ..	1	2	Princep Street ..	1	9
Mill Lane, Saltley ..		7	Nova Scotia Street ..		3	Priory Road, B'lsll H'th ..	3	
Mill Lane, Ward End ..			Nursery Road ..	1	1	Priory Road, Edgbaston ..	3	
Mill Street ..		2	O			Pritchett's Road ..		
Miller Street ..	2	24	Oakfield Road ..		3	Pritchett Street ..	7	25
Mills Lane ..			Oakley Road ..		4	Proctor Street ..	2	6
Milton Street ..		5	Old Sqnaro ..		1	Prospect Row ..		1
Milward Street ..		2	Old Church Road ..			Q		
Minories ..			Old Cross Street ..	1	3	Queen Street ..	3	8
Moat Lane ..			Oldfield Road ..	2	22	R		
Moat Row ..			Old Meeting Street ..			Radnor Street ..		4
Moiliett Street ..		6	Oliver Road ..		3	Raglan Road ..		
Moland Street ..	3	17	Oliver Street ..	1	5	Railway Ter., Duddesdon ..	1	5
Molo Street ..	1	13	Ombersley Road ..	1	12	Railway Ter., Nechells ..	1	7
Mona Road ..		2	Oozells Street ..		1	Ralph Road ..		
Montagno Road ..			Oozells Street North ..		1	Rann Street ..		11
Montagno Street ..		6	Orchard Road ..	3	3	Ravenhurst Road ..	2	3
Montgomery Street ..	1	8	Orford Road ..	1	2	Ravenhurst Street ..		9
Montpellier Street ..	1	3	Ormond Street ..	2	14	Rawlinis Street ..		5
Monument Road ..	2	26	Osler Street ..	2	13	Rea Street ..		11
Moor Street ..	2	4	Oughton Place ..		3	Rea Street South ..		2
Moore's Row ..		1	Owen Street ..	2	4	Regent Parade ..		
Moorsom Street ..	3	20	Oxford Street ..	1	1	Regent Place ..		3
Moreton Street ..		3	Oxygen Street ..			Regent Road ..		1
Morville Street ..	5	17	P			Regent Row ..		3
Moseley Road ..	2	26	Paddington Street ..			Regent Street ..	1	
Moseley Street ..	5	22	Pakenham Road ..			Regent Park Road ..	1	1
Mostyn Road ..		1	Palmer Street ..	2	9	Reginald Road ..	1	9
Mott Street ..	2	6	Palmerston Road ..			Reservoir Retrent ..		2
Mount Pleasant, B'lsll H'th ..	2		Parade ..			Reservoir Road ..		5
Mount Pleasant, B'ley ..	4		Paradise Street ..		1	Richard Street ..	4	18
Mount Street ..	1	10	Park Lane ..		3	Richmond Hill Road ..		1
Muntz Street ..	1	11	Park Road, All Saints ..	4	43	Ridley Street ..	2	5
Musgrave Road ..		2	Park Road, Harborne ..		6	River St., Balsall Heath ..		6
N			Park Road, Saltley ..			River St., St. Barthol'w's ..	1	2
Navigation Street ..	1	7	Park Street ..	1	8	Robert Road ..		6
Nechells Park Road ..	1	25	Park Hill Road ..		1	Rocky Lane ..	1	11
Nechells Place ..	2	5	Parker Street ..	2	7	Rodway Street ..		1
Needham Street ..		2	Parliament Street ..	1	5	Rope Walk ..		1

STREETS.	Zymotic Diseases.	Other Diseases.	STREETS.	Zymotic Diseases.	Other Diseases.	STREETS.	Zymotic Diseases.	Other Diseases.
Rosalie Street ..	2		Smith Street, St. George's	5	11	Tennal Road ..	..	1
Roshven Street ..			Smith Street, Dudleyton	1	1	Teunant Street ..	..	3 24
Rotton Park Road ..	1		Smithfield Passage ..	..	1	Theunyson Road ..	..	1
Rotton Park Street ..	2		Smithfield Street ..	..		Theodore Street ..	..	1 4
Rowland Street ..	1		Snow Hill ..	..	7	Theresa Road ..	..	1 5
Rupert Street ..	2	12	Soho Road ..	..	2	Thimble Mill Lane ..	..	8
Russell Street ..			Somerset Road ..	..		Thomas St., B'sall H'th	..	3
Ruston Street ..	1	5	Somerset Street ..	2	1	Thomas St., Deritend ..	..	2
Ruston Street North ..	2	14	Somerville Road ..	..	3	Thorp Street ..	..	1
Rutland Road ..	3		South Road ..	..	8	Tillingham Street ..	..	1 3
Ryder Street ..	1	6	South Street ..	..	3	Tindal St., Balsall H'th	..	6
Rylaund Road ..	6	8	Southgate ..	..		Tower Street ..	..	6 22
Rylaund Street ..	4	7	Spark Street ..	..	3	Trafalgar Road ..	..	
S								
Salop Street ..	2		Speaking Stile Walk ..	..	1	Treut Street ..	..	6
Saltley Road ..	4	6	Speedwell Road ..	..	2	Trevor Street ..	..	15
Saltley Street ..	3	7	Speneer Street ..	..	5	Triuity Terrace ..	..	1
Sampson Road ..	1	11	Spiecal Street ..	..	1	Tudor Street ..	..	6
Sampson Road North ..	3		Spon Terrace ..	..		Turk's Lane ..	..	
Sand Pits ..	1	4	Spoouer Street ..	..	1 7	Turuer Street ..	..	3
Sand Street ..	4		Spring Hill ..	..	4 11			
Saudon Road ..	1		Spring Hill Passage ..	..	1 4			
Sandy Lane ..	14		Spring Road ..	..	4			
Sarah Street ..			Sprig Street ..	..	1 2			
St. Andrew's Road ..	3	25	Spring Vale ..	..				
St. Andrew's Street ..			Springfield Street ..	..	3 14			
St. Augustine's Road ..			Stafford Street ..	..	1 2			
St. Clement's Road ..	3		Stanhope Street ..	..	1 3			
St. George's Place ..	2		Staniforth Street ..	..	2 12			
St. George's Street ..	2	13	Stanley Road ..	..	1			
St. James' Place ..	1	2	Stanmore Road ..	..	3	Unett Street ..	..	3 22
St. James' Road ..	1		Station Road, Harborne	..	2	Union Passage ..	..	
St. James' Street ..	11		Station Road, Rotton Pk	..		Union Street ..	..	1
St. John's Rd., B'll H'th	3		Station Street ..	..	1	Union Terrace ..	..	
St. John's Rd., H'borue			Steelford Lane ..	..		Upper Cox Street ..	..	1 8
St. Luke's Read ..	3	16	Steelhouse Lane ..	..	5	Upper Deau Street ..	..	1 4
St. Mark's Street ..	10		Stella Street ..	..	1 3	Upper Gough Street ..	..	2 11
St. Martin's Lane ..			Stephenson Place ..	..		Upper Highgate Street ..	..	1 9
St. Martin's Place ..	2		Stephenson Street ..	..		Upper Marshall Street ..	..	1
St. Martin's Row ..	1		Steward Street ..	..	5 11	Upper Mary Street ..	..	
St. Martin's Street ..	1	12	Stirling Road ..	..	2 2	Upper Mill Lane ..	..	
St. Mary's Roa <sup>1</sup>			Stoke Street ..	..	2 7	Upper Priory ..	..	3
St. Mary's Row ..	1		Stone Yard ..	..	1	Upper Ryland Road ..	..	1 6
St. Mary's Street ..	5		Stoney Lane ..	..	10	Upper Trinity Street ..	..	9
St. Oswald's Road ..	4		Stour Street ..	..	2 18			
St. Paul's Road ..	2	14	Stratford Place ..	..	1			
St. Paul's Square ..	1		Stratford Road ..	..	10			
St. Peter's Place ..	1		Stratford Street ..	..	1			
St. Philip's Place ..			Streusham Road ..	..				
St. Stephen's Street ..	1		Stuart Street ..	..	1			
St. Vineent Street ..	1	18	Suffolk Street ..	..	16	V		
Scholefield Street ..	2	15	Summer Lane ..	..	5 27	Varna Road ..	..	5
Scotland Street ..	2		Summer Road ..	..	1 15	Vaughton Street ..	..	1 15
Scott Street ..	1	1	Summer Row ..	..	1 1	Vaughtou Street South ..	..	
Sefton Road ..	1		Summer Street ..	..		Vauxhall Grove ..	..	3
Serpentine Road ..			Summerfield Crescent ..	..	4	Vauxhall Road ..	..	2 17
Severn Street ..	1		Summerfield Road ..	..		Vauxhall Street ..	..	4
Seymour St., B'sall H'th	4		Summer Hill Road ..	..	2	Ventnor Road ..	..	6
Seymour St., St. Barth.			Summer Hill Street ..	..	1 4	Vere Street ..	..	1 7
Shadwell Street ..	1		Sun Street ..	..	1 11	Vernon Road ..	..	
Shakespeare Road ..	2	11	Sun Street West ..	..	2	Vesey Street ..	..	
Sheep Street ..	1	9	Sutton Street ..	..	1	Viaduct Street ..	..	
Sheepcote Lane ..	3	9	Swallow Street ..	..		Viearage Rd., Edgbaston ..	..	
Sheepeote Street ..	3	9	Sydenham Road ..	..	4	Vicarage Rd., H'borne ..	..	
Shefford Road ..	1	4	Sydney Road ..	..	1	Victoria Grove ..	..	1
Shenstone Road ..						Victoria Road ..	..	1
Sherborne Street ..	5	17				Victoria St., B'sall H'th	..	2 5
Sherbourne Road ..	2	17	Talbot Street ..	..	1 4	Victoria St., Bordesley ..	..	9
Sherloek Street ..	2	27	Talfourd Street ..	..	9	Villa Street ..	..	5
Sir Harry's Road ..			Taunton Road ..	..		Villiers Street ..	..	3
Skinner Lane ..		5	Taylor Street ..	..	2	Vineent Crescent ..	..	1
Skinner Street ..	1	5	Temple Row ..	..		Vineent Parade ..	..	5
Sladefield Lane ..			Temple Row West ..	..		Vincent Street ..	..	1 11
Slaney Street ..	1	1	Temple Street ..	..	1	Vine Street ..	..	1 1
Sloane Street ..		1	Templefield Street ..	..	5	Vittoria Street ..	..	2
Slough Lane ..			Tenby Street ..	..	2	Vyse Street ..	..	3
Smallbrook Street ..	5		Tenby Street North ..	..	1 2			

Grand Total 9863

Map  
OF THE  
CITY  
OF  
**BIRMINGHAM**  
PUBLISHED BY ORDER OF THE COUNCIL.  
William S. Till,  
CITY SURVEYOR.  
1892.

NOTE, THE RED SPOTS REPRESENT THE NUMBER OF DEATHS (133) FROM SCARLET FEVER IN 1895  
 RED CROSSES " " " " MEASLES " "  
 BLUE SPOTS " " " " DIPHTHERIA " "  
 BLUE CROSSES " " " " TYPHOID FEVER " "



NOTE Since the 30th day of November 1881,  
 the City of Birmingham has been wholly  
 incorporated in the County of Warwick  
 and the Boundary thereof corresponds  
 with the Parliamentary Boundary.



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ANNUAL CIRCULAR

FOR THE EXCHANGE OF JOURNALS AND BOOKS.

1850.

1851.



1895

DEATH RATE PER  
1000 PER ANN  
AND  
AV. DEATH-  
AGE IN YEARS

TOTAL DEATH RATE FROM ALL CA  
AVERAGE AG

JANUARY FEBRUARY MARCH APRIL MAY

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

40

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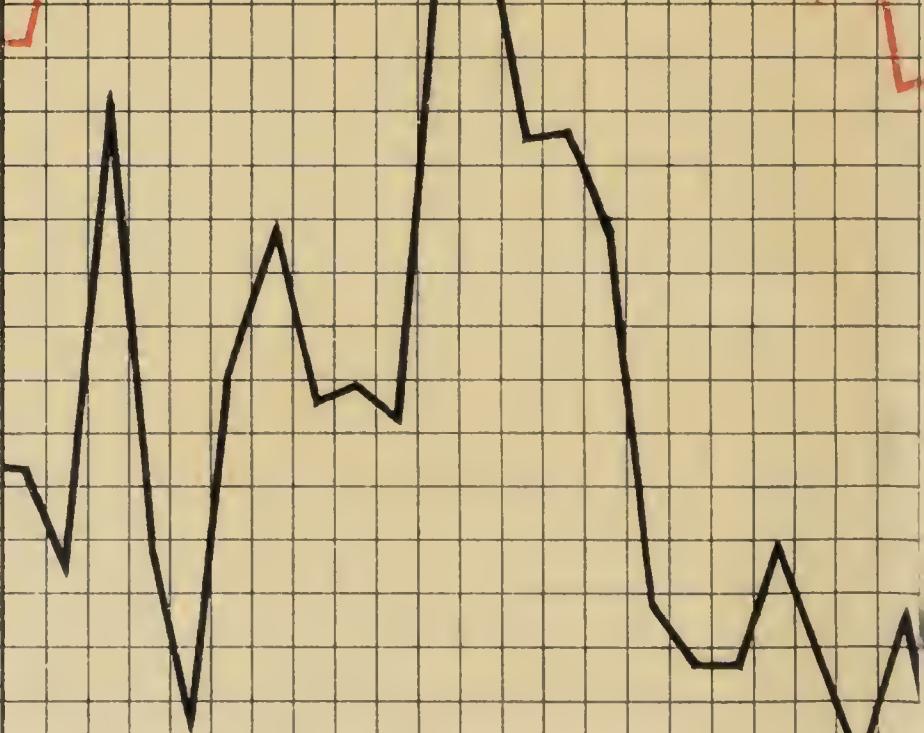
14

13

12

11

10



ES SHEWN IN WEEKLY PERIODS THUS —  
AT DEATH      "      "      "

JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
44	25	26	27	28	29	30
31	32	33	34	35	36	37
38	39	40	41	42	43	44
45	46	47	48	49	50	51
52						





R E P O R T  
ON  
A D U L T E R A T I O N .



## CITY ANALYST'S LABORATORY,

THE COUNCIL HOUSE, BIRMINGHAM,

*March 20th, 1896.*

TO THE HEALTH COMMITTEE.

Sir. CHAIRMAN AND GENTLEMEN,

I beg to report that during the year 1895 I received 1,131 samples for analysis under the Sale of Food and Drugs Acts and the Margarine Act. One of them were submitted to me by private purchasers, the rest were forwarded by the Food Inspector, Police Sergeant H. I. Jones.

The following list shows the number of samples analysed, distinguishing those found to be genuine from those which were adulterated :—

		No. of Samples Analysed.	No. found to be Genuine.	No. found to be Adulterated
Milk ...	...	325	265	60
Butter	...	203	174	29
Coffee	...	90	82	8
Pepper	...	67	67	0
Bread	...	63	63	0
Mustard	...	49	47	2
Oatmeal	...	48	46	2
Flour	...	47	47	0
Sugar Confectionery	...	45	45	0
Ale	...	35	31	4
Whiskey	...	24	19	5
Ground Ginger	...	23	21	2
Tincture of Iodine	...	14	7	7
Compound Tincture of Benzoin	...	13	11	2
Sugar	...	12	11	1
Vinegar	...	12	12	0
Tincture of Myrrh	...	11	8	3
Lard...	...	10	10	0
Compound Liquorice Powder	...	8	8	0
Tincture of Rhubarb	...	7	7	0
Tincture of Senna	...	5	3	2
Compound Tincture of Gentian	...	4	4	0
Tincture of Aloes	...	3	1	2
Syrup of Rhubarb	...	3	3	0
Glycerine Jujubes	...	3	3	0
Cheese	...	2	2	0
Paregoric	...	2	1	1
Precipitated Sulphur	...	1	1	0
Spirits of Nitrous Ether	...	1	1	0
Margarine	...	1	1	0
		1,131	1,001	130

Particulars are given in the subjoined statement of the samples which were adulterated :—

NO.	DATE.	ARTICLE.	REMARKS.
1—	Jan. 1st	Milk ...	Adulterated with 28% of water. Fined 10s. and 8s. costs.
8—	" 4th	Coffee ...	Adulterated with 90% of chicory. Fined £1 and 8s. costs.
10—	" 4th	Butter ...	Adulterated with 85% of foreign fat. Fined £1 and 9s. costs.
28—	" 4th	Milk ...	Adulterated with 7% of water. Cautioned by Health Sub-Committee.
51—	" 15th	Milk ...	Adulterated with 5% of water. Cautioned by Health Sub-Committee.
52—	" 15th	Milk ...	Deprived of 25% of its fat. Fined 5s. and 8s. costs.
53—	" 15th	Milk ...	Adulterated with 16% of water. Fined 5s. and 8s. costs.
56—	" 15th	Milk ...	Adulterated with 5% of water. Cautioned by Health Sub-Committee
59—	" 16th	Milk ...	Adulterated with 10% of water. Fined 1s. and 8s. costs.
68—	" 18th	Coffee ...	Adulterated with 5% of chicory. Cautioned by Health Sub-Committee.
69—	" 18th	Butter ...	Adulterated with 75% of foreign fat. Fined £2 and 9s. costs.
81—	" 24th	Milk ...	Adulterated with 5% of water. Cautioned by Health Sub-Committee.
85—	" 24th	Milk ...	Adulterated with 4% of water. Cautioned by Health Sub-Committee.
106—	" 30th	Milk ...	Adulterated with 11% of water. Fined 5s. and 8s. costs.
110—	Feb. 4th	" Separated " Milk	Adulterated with 11% of water. Fined 10s. and 8s. costs.
115—	" 5th	Milk ...	Adulterated with 20% of water. Summons withdrawn; same vendor as No. 116.
116—	" 5th	Milk ...	Adulterated with 17% of water. Fined £1 and 9s. costs.
117—	" 5th	Milk ...	Adulterated with 13% of water. No action taken; same vendor as No. 116.
118—	" 5th	Milk ...	Adulterated with 21% of water. No action taken; same vendor as No. 116.
128—	" 6th	Demerara Sugar ...	Dyed to resemble Demerara. Cautioned by Health Sub-Committee.
135—	" 12th	Milk ...	Adulterated with 22% of water. Paid costs amounting to 8s.
136—	" 12th	Milk ...	Adulterated with 16% of water. Fined 5s and 8s. costs.
137—	" 12th	Milk ...	Adulterated with 13% of water. Fined 5s and 8s. costs.
139—	" 12th	Milk ...	Adulterated with 22% of water. Fined 5s. and 8s. costs.
142—	" 18th	Milk ...	Adulterated with 5% of water. Cautioned by Health Sub-Committee.

NO.	DATE.	ARTICLE.	REMARKS.
159—	Feb. 20th	Butter ...	... Adulterated with 80% of foreign fat. Fined £2 and 8s. costs.
164—	" 20th	Butter ...	... Adulterated with 75% of foreign fat. Fined £2 and 8s. costs.
173 —	" 26th	Ground Ginger ...	Adulterated with 50% of exhausted ginger. Fined 10s. and 8s. costs.
204—	Mar. 6th	Butter ...	... Adulterated with 65% of foreign fat. Paid costs amounting to 7s.
218—	" 7th	Milk ...	... Adulterated with 5% of water. Cautioned by Health Sub-Committee.
238—	" 14th	Margarine	... Consisted of Margarine ; not labelled. No action taken.
255—	" 20th	Paregoric ...	... Deficient of 10% of proof spirit. Cautioned by Health Sub-Committee.
259—	" 20th	Whiskey ...	... Adulterated with 20% of water. Fined £5 and 10s. 6d. costs.
263—	" 21st	Milk ...	... Adulterated with 7% of water and deprived of 10% of its fat. Fined £5 and £1 1s. 6d. costs.
264—	" 21st	Milk ...	... Adulterated with 11% of water. Paid costs amounting to 6s 6d. Same vendor as No. 263.
265—	" 21st	Milk ...	... Adulterated with 13% of water. Paid costs amounting to 6s. 6d. Same vendor as No. 263.
266—	" 21st	Milk ...	... Adulterated with 5% of water and deprived of 10% of its fat. Paid costs amounting to 6s. 6d. Same vendor as No. 263.
271—	" 21st	Milk ...	... Deprived of 30% of its fat. Fined £2 and £2 13s. 6d. costs.
276 —	" 26th	Milk ...	... Deprived of 30% of its fat. Fined £3 and 19s. costs.
283—	" 28th	Milk ...	... Adulterated with 11% of water. Fined £1 and 8s. costs.
296—	" 29th	Butter ...	... Adulterated with 75% of foreign fat. Fined £3 and 10s. costs.
316—	April 3rd	Butter ...	... Consisted entirely of foreign fat. Paid costs amounting to 7s.
317—	" 3rd	Butter ...	... Adulterated with 35% of foreign fat. Fined £3 and 17s. costs.
328—	" 9th	Milk ...	... Deprived of 15% of fat. Cautioned by Health Sub-Committee.
350—	" 18th	Milk ...	... Deprived of 40% of its fat. Fined 10s. and 8s. costs.
353—	" 23rd	Milk ...	... Adulterated with 19% of water. Fined £10 and 31s. costs.
355—	" 23rd	Milk ...	... Adulterated with 19% of water. Fined 5s. and 8s. costs.
356—	" 23rd	Milk ...	... Deprived of 16% of its fat. Fined 5s. and 9s. costs.
359—	" 26th	Milk ...	... Adulterated with 5% of water. Cautioned by Health Sub-Committee.
361—	" 26th	Milk ...	... Deprived of 29% of its fat. Fined £1 and 8s. costs.

NO.	DATE.	ARTICLE.	REMARKS.
385—	May 1st ...	Whiskey ...	... Adulterated with 16% of water, being 37 degrees under proof. Fined £5 and 10s. costs.
390—	" 1st ...	Whiskey ...	... Adulterated with 4½% of water, being 28·5 degrees under proof. Fined £1 and 8s. costs.
391—	" 1st ...	Milk ...	... Deprived of 17% of its fat. Fined 5s. and 8s. costs.
392—	" 1st ...	Milk ...	... Adulterated with 6% of water. Cautioned by Health Sub-Committee.
393—	" 1st ...	Milk ...	... Adulterated with 13% of water. Fined 5s. and 8s. costs.
396—	" 1st ...	Milk ...	... Deprived of 18% of its fat. Fined 10s. and 19s. 6d. costs.
422—	" 8th ...	Milk ...	... Adulterated with 5% of water. Cautioned by Health Sub-Committee.
428—	" 10th ...	Milk ...	... Adulterated with 10% of water and deprived of 38% of its fat. Fined 30s. and 8s. costs.
432—	" 13th ...	Milk ...	... Deprived of 21% of its fat. Dismissed on production of warranty.
442—	" 16th ...	Coffee ...	... Adulterated with 20% of chicory. Fined £1 and 11s. costs.
470—	" 22nd ...	Milk ...	... Adulterated with 5% of water. Cautioned by Health Sub-Committee.
471—	" 22nd ...	Milk ...	... Adulterated with 13% of water. Fined £2 and 8s. costs.
483—	" 24th ...	Milk ...	... Deprived of 24% of its fat. Fined 10s. and 8s. costs.
484—	" 24th ...	Milk ...	... Adulterated with 9% of water. Cautioned by Health Sub-Committee.
485—	" 24th ...	Skimmed Milk ...	... Adulterated with 10% of water. Fined £2 and 8s. costs.
491—	" 28th ...	Milk ...	... Adulterated with 10% of water and deprived of 28% of its fat. No action taken.
524—	June 12th ...	Ground Ginger ...	... Adulterated with 30% of exhausted ginger. No action taken.
532—	" 12th ...	Mustard ...	... Adulterated with 20% of starch and turmeric. No action taken.
538—	" 12th ...	Mustard ...	... Adulterated with 20% of starch and turmeric. No action taken.
552—	" 27th ...	Milk ...	... Adulterated with 6% of water. Private purchaser.
557—	July 1st ...	Milk ...	... Adulterated with 10% of water. Fined £1 and 8s. costs.
558—	" 1st ...	Milk ...	... Adulterated with 10% of water and deprived of 20% of its fat. Fined 10s. and 8s. costs.
559—	" 1st ...	Milk ...	... Adulterated with 9% of water and deprived of 12% of its fat. Fined £1 and 11s. costs.
560—	" 1st ...	Milk ...	... Adulterated with 21% of water. Fined £2 and 8s. costs.
567—	" 1st ...	Milk ...	... Adulterated with 24% of water. Fined £3 and 8s. costs.
568—	" 1st ...	Milk ...	... Adulterated with 7% of water. Cautioned by Health Sub-Committee.
600—	" 18th ..	Ale ...	... Contained an excess of salt.
602—	" 18th ...	Ale ...	... Contained an excess of salt.

NO.	DATE.	ARTICLE.	REMARKS.
605—	July 18th	Ale ...	Contained an excess of salt.
630—	" 19th	Oatmeal ...	Contained a little barley meal.
692—	Aug. 15th	Ale ...	Contained an excess of salt.
703—	" 19th	Milk ...	Deprived of 22% of its fat.
758—	Sept. 30th	Butter ...	Contained 60% of foreign fat. Fined 2s. 6d. and 9s. costs.
789—	Oct. 11th	Tincture of Senna	Deficient of 60% of the solid ingredients. Fined 2s. 6d. and 8s. costs.
792—	" 11th	Tincture of Senna	Deficient of half of the solid ingredients. Fined 2s. 6d. and 8s. costs.
794—	" 11th	Compound Tincture of Benzoin	Deficient of 20% of the solid ingredients. Fined 5s. costs.
796—	" 11th	Compound Tincture of Benzoin	Deficient of 25% of the solid ingredients. Fined 5s. costs.
823—	" 16th	Butter ...	Adulterated with 70% of foreign fat. Fined £3 and 8s. costs.
825—	" 16th	Butter ...	Adulterated with 80% of foreign fat. Fined £2 and 10s. costs.
826—	" 16th	Butter ...	Adulterated with 84% of foreign fat. Fined 10s. and 10s. costs.
829—	" 16th	Butter ...	Adulterated with 80% of foreign fat. Fined £1 and 9s. costs.
830—	" 16th	Butter ...	Adulterated with 83% of foreign fat. Fined 10s. and 9s. costs.
833—	" 16th	Butter ...	Consisted entirely of foreign fat. Fined £1 and 9s. costs.
871—	" 25th	Coffee ...	Adulterated with 65% of chicory. Fined £2 and 9s. costs.
873—	" 25th	Butter ...	Adulterated with 85% of foreign fat. Fined £3 and 9s. costs.
874—	" 25th	Coffee ...	Adulterated with 35% of chicory. Cautioned by Health Sub-Committee.
876—	" 25th	Butter ...	Consisted entirely of foreign fat. Fined 10s. and 8s. costs
877—	" 25th	Butter ...	Adulterated with 85% of foreign fat. Fined £2 and 9s. costs.
878—	" 25th	Coffee ...	Adulterated with 50% of chicory. Fined £1 and 10s. costs.
910—	" 25th	Oatmeal ...	Adulterated with 10% of barley meal. Cautioned by Health Sub-Committee.
921—	Nov. 1st	Butter ...	Adulterated with 80% of foreign fat. Fined 5s. and 9s. costs.
924—	" 1st	Butter ...	Adulterated with 85% of foreign fat. Fined £2 and 10s. costs.
940—	" 8th	Butter ...	Adulterated with 90% of foreign fat. Fined £5 and 10s. costs.
941—	" 8th	Butter ...	Adulterated with 90% of foreign fat. Fined £3 and 9s. costs.
944—	" 8th	Butter ...	Adulterated with 90% of foreign fat. Fined £5 and 9s. costs.
945—	" 8th	Butter ...	Adulterated with 75% of foreign fat. Fined £2 and 10s. costs.

NO.	DATE.	ARTICLE.	REMARKS.
946—	Nov. 8th ...	Butter ...	Adulterated with 85% of foreign fat. Fined £5 and 9s. costs.
947—	" 8th ...	Butter ...	Adulterated with 85% of foreign fat. Fined £2 and 9s. costs.
949—	" 8th ...	Butter ...	Adulterated with 75% of foreign fat. Fined £5 and 11s. costs.
952—	" 12th ...	Tincture of Iodine	Contained 99% of Iodine in excess. Fined £1 and 8s. costs.
955—	" 12th ...	Tincture of Aloes	Contained 40% of solid ingredients and 50% of spirit in excess. Fined £1 and 11s. costs.
956—	" 12th ...	Tincture of Iodine	Adulterated with 10% of glycerine and contained 150% of Iodine and 50% of Iodide of Potassium in excess. Fined £1 and 12s. costs.
959—	" 12th ...	Tincture of Iodine	Contained 25% of Iodine in excess. Cautioned by Health Sub-Committee.
960—	" 12th ...	Tincture of Aloes	Contained 40% of solid ingredients and 50% of spirit in excess. Prosecution withdrawn.
987—	" 14th ...	Coffee ...	Adulterated with 5% of chicory. Cautioned by Health Sub-Committee.
989—	" 14th ...	Coffee ...	Adulterated with 45% of chicory. Fined £1 and 9s. costs.
1002—	" 21st ...	Milk ...	Adulterated with 10% of water. Cautioned by Health Sub-Committee.
1005—	" 21st ...	Milk ...	Adulterated with 10% of water and deprived of 7% of its fat. Fined £2 and 9s. costs.
1023—	" 30th ...	Whiskey ...	Adulterated with 4% of water. Cautioned by Health Sub-Committee.
1031—	" 30th ...	Whiskey ...	Adulterated with 5½% of water. Fined £1 and 9s. costs.
1035—	Dec. 2nd ...	Milk ...	Adulterated with 6% of water. Cautioned by Health Sub-Committee.
1057—	" 6th ...	Tincture of Iodine	Deficient of 25% of Iodide of Potassium. Cautioned by Health Sub-Committee.
1060—	" 6th ...	Tincture of Myrrh	Deficient of 25% of solid ingredients. Cautioned by Health Sub-Committee.
1062—	" 6th ...	Tincture of Iodine	Deficient of 9% of Iodine and 50% of Iodide of Potassium. Cautioned by Health Sub-Committee.
1063—	" 6th ...	Tincture of Iodine	Deficient of 10% of spirit and 8% of Iodide of Potassium. Cautioned by Health Sub-Committee.
1064—	" 6th ...	Tincture of Myrrh	Deficient of 10% of spirit. Cautioned by Health Sub-Committee.
1066—	" 6th ...	Tincture of Iodine	Contained 12% of Iodine and 12% of Iodide of Potassium in excess. Cautioned by Health Sub-Committee.
1099—	" 17th ...	Tincture of Myrrh	Deficient of 30% of solid ingredients. Cautioned by Health Sub-Committee.
1102—	" 17th ...	Milk ...	Deprived of 25% of its fat. Fined 5/- and 9/- costs.
1125—	" 21st ...	Butter ...	Adulterated with 80% of foreign fat. Fined £2 and 9/- costs.
1129—	" 21st ...	Butter ...	Adulterated with 75% of foreign fat. Fined £2 and 14/- costs.

Eleven per cent. of the samples analysed were not of the proper quality, this figure being identical with that for the previous year, which was rather lower than usual. The table below shows the total percentage of adulteration, and percentages in certain classes of articles, for the ten years 1873-82, and for each subsequent year. In drawing up the table I have not calculated the percentage unless at least twenty samples were analysed.

Percentage of Adulteration.

Years.	Number of Samples Analyzed.	Total Percentage of Adulteration	Percentage of Adulteration of undermentioned Articles.									
			Milk.	Butter.	Lard and Cheese.	Bread and Flour.	Oat-meal, Arrow-root, Sago, Tapioca	Condiments and Spices	Tea, Coffee, Cocoa.	Beer and Spirits.	Drugs.	
10 years 1873-82	1529	29	50	18	—	—	0	21	11	25	30	31
1883	151	38	47	—	—	—	—	—	25	—	—	—
1884	816	21	41	40	—	—	1	0	9	67	3	16
1885	914	15	24	40	—	—	0	0	11	—	2	30
1886	876	9	18	23	—	—	0	1	11	—	8	—
1887	818	12	15	52	—	—	0	1	20	18	1	0
1888	753	11	18	20	30	0	0	1	7	—	13	0
1889	873	16	19	32	—	2	2	11	48	6	17	—
1890	927	13	22	14	0	0	0	3	35	4	—	—
1891	811	11	18	23	—	0	0	0	0	0	12	6
1892	969	14	19	17	3	0	4	6	0	12	27	—
1893	1004	13	19	11	2	0	0	13	0	17	26	—
1894	1129	11	10	14	0	0	—	6	5	28	20	—
1895	1131	11	18	14	—	0	4	3	9	15	23	—

Eighteen per cent. of the samples of *Milk* were adulterated. *Milk*. This figure was about equal to the average, though nearly twice as high as in 1894. Of the 60 adulterated samples 40 were watered, 13 were deprived of cream, and 7 were below the standard for pure cows' milk in both respects. If the samples submitted to me for analysis fairly represent the general quality of the Milk sold in Birmingham, it appears that about one-fifth of the total quantity is adulterated in one way or another. The vendors of 33 samples of Milk were prosecuted by your Committee, and the fines imposed, exclusive of costs, ranged from 1s. to £10, and gave an average of £1 6s. Od. per case.

Twenty-nine samples of *Butter*, or 14 per cent. of the total *Butter*. number examined, were found to be margarine: that is, they consisted either wholly or partly of foreign fat. The average amount of foreign material in them was 80 per cent., so that their sale in the guise of butter was a gross misrepresentation and a fraud. Twenty-seven vendors of adulterated butter were fined, the average amount of the fine being £2 4s. Od.

All the samples of *Bread and Flour*, 63 of the former and 47 of the latter, were genuine. So far as I can judge there has never been much adulteration of these two articles of food in Birmingham. *Bread and Flour*.

Oatmeal.

Two samples of *Oatmeal* out of 48 contained some barley-meal.

Condiments.

There was not much adulteration of the Condiments analysed. All the *Peppers* and all the *Vinegars* were genuine, but two *Mustards* out of 49 contained starch and tumeric, and two samples of *Ground Ginger* out of 23 were adulterated with "exhausted" ginger.

Coffee.

Ninety samples of *Coffee* were examined, and chicory was found in 8 of them. One sample had 90 per cent. of the latter article in it, so that it might perhaps have reasonably been sold as chicory, but certainly not as coffee.

Ale.

Whiskey.

Four *Ales* out of 35 contained an excess of salt. Five *Whiskies* had been watered to a lower strength than is allowed by law; in one instance 20 per cent. of added water was found, one-fifth of what was bought for whiskey being therefore added water.

Drugs.

The Drugs came out badly, as they generally do, 23 per cent. of them being adulterated. Seven samples of *Tincture of Iodine* out of 14, two of *Tincture of Aloes* out of 3, two of *Tincture of Senna* out of 5, three of *Tincture of Myrrh* out of 11, two of *Compound Tincture of Benzoin* out of 13, and one of *Paregoric* out of 2, were not compounded as required by the *Pharmacopœia*.

Sugar.

A sample of *Sugar* sold as Demerara consisted of white crystals which had been dyed to resemble the genuine and more expensive article.

Legal Proceedings.

Your Committee cautioned 31 persons in respect of adulterated articles sold by them, and legal proceedings were taken in 87 instances. One case was dismissed on production of a warranty, and two summonses were withdrawn. In the remaining 84 cases convictions were obtained, the fines imposed amounting to £124 18s. 6d., and the costs to £41 6s. 6d.

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D., F.I.C..

*City Analyst.*

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